

2004 Chevrolet S10 Pickup

2004 BRAKES Disc Brakes - Blazer/S10, Jimmy/Sonoma

2004 BRAKES**Disc Brakes - Blazer/S10, Jimmy/Sonoma****SPECIFICATIONS****FASTENER TIGHTENING SPECIFICATIONS****Fastener Tightening Specifications**

Application	Specification	
	Metric	English
ABS Sensor Wire	17 N.m	13 lb ft
Bleeder Valve (Front Wheel)	12 N.m	110 lb in
Bleeder Valve (Rear Wheel)	12 N.m	110 lb in
Brake Hose Fitting Bolt (Rear Wheel)	54 N.m	40 lb ft
Caliper Bracket to Knuckle Mounting Bolt (Dual Piston Front Caliper)	180 N.m	133 lb ft
Caliper Bracket to Mounting Plate Bolt (Rear Wheel)	70 N.m	52 lb ft
Caliper Guide Pin Mounting Bolt (Dual Piston Front Caliper)	115 N.m	85 lb ft
Caliper Mounting Bolt (2 Wheel Disc Brakes)	51 N.m	38 lb ft
Front Flex Hose Bolt (Front Wheel)	54 N.m	40 lb ft
Guide Pin Bolt (Rear Caliper)	31 N.m	23 lb ft
Mounting Brake Nut (Rear Wheel)	65 N.m	47 lb ft
Park Brake Cable Adjusting Nut	3.5 N.m	31 lb in
Rear Brake Backing Plate Mounting Bolts	65 N.m	48 lb ft

DISC BRAKE COMPONENT SPECIFICATIONS**Disc Brake Component Specifications**

Application	Specification	
	Metric	English
JM3 (Front)		
• Rotor Discard Thickness *	24.51 mm	0.965 in
• Rotor Minimum Allowable Thickness After Refinish	24.89 mm	0.980 in
• Rotor Thickness (new)	26.2 mm	1.03 in
• Rotor Maximum Allowable Lateral Runout	0.051 mm	0.002 in
• Rotor Maximum Allowable Scoring	1.5 mm	0.059 in
• Rotor Maximum Allowable Thickness Variation	0.025 mm	0.001 in

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JC1 (Front)

• Rotor Discard Thickness *	27.5 mm	1.08 in
• Rotor Minimum Allowable Thickness After Refinish	28 mm	1.10 in
• Rotor Thickness (new)	29 mm	1.14 in
• Rotor Maximum Allowable Lateral Runout	0.051 mm	0.002 in
• Rotor Maximum Allowable Scoring	1.5 mm	0.059 in
• Rotor Maximum Allowable Thickness Variation	0.025 mm	0.001 in

JC1 (Rear)

• Rotor Discard Thickness *	18.50 mm	0.728 in
• Rotor Minimum Allowable Thickness After Refinish	19.00 mm	0.748 in
• Rotor Thickness (new)	20 mm	0.787 in
• Rotor Maximum Allowable Lateral Runout	0.051 mm	0.002 in
• Rotor Maximum Allowable Scoring	1.50 mm	0.059 in
• Rotor Maximum Allowable Thickness Variation	0.025 mm	0.001 in

* All brake rotors have a discard dimension cast into them. Replace any rotor that does not meet this specification. After refinishing the rotor, replace any rotor that does not meet the minimum thickness specifications.

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC STARTING POINT - DISC BRAKES

Begin the disc brake system diagnosis with **Diagnostic Starting Point - Hydraulic Brakes** in Hydraulic Brakes. The use of the Diagnostic Starting Point will lead to the identification of the correct procedure for diagnosing the system and where the procedure is located.

BRAKE ROTOR THICKNESS MEASUREMENT

CAUTION: Refer to Brake Dust
Caution

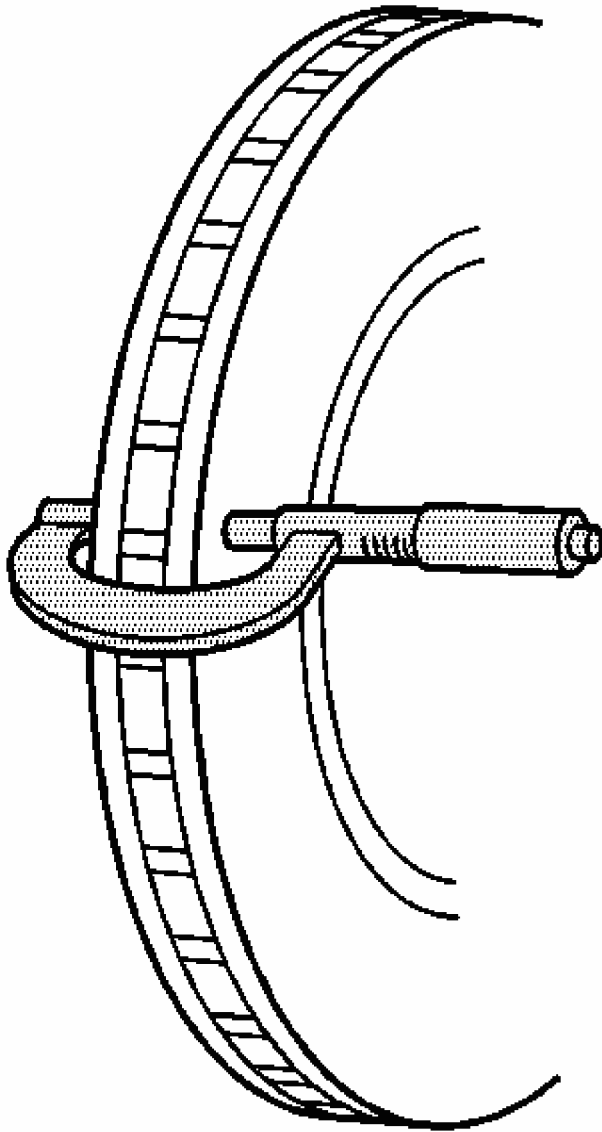


Fig. 1: Measuring Brake Rotor Thickness
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

1. Clean the brake pad lining contact surface of the brake rotor with denatured alcohol or an equivalent brake cleaner.
2. Using a micrometer calibrated in ten-thousands of an inch, measure and record the

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lowest thickness of the brake rotor at four or more points, equally spaced around the rotor.

Ensure that the measurements are only taken within the brake pad lining contact area and that the micrometer is positioned the same distance from the outside edge of the rotor for each measurement.

3. Compare the lowest thickness measurement recorded to the following specifications:

Specification:

- RPO JC1 (Front rotor), Brake rotor minimum allowable thickness after refinishing 28.58 mm (1.250 in).
 - RPO JC1 (Front rotor), Rotor Discard Thickness 27.5 mm (1.08 in).
 - RPO JC1 (Rear Rotor), Brake rotor minimum allowable thickness after refinishing 19.64 mm (0.735 in)
 - RPO JC1 (Rear Rotor), Brake rotor discard thickness 18.50 mm (0.728 in).
 - RPO JM3 (Front Rotor), Brake rotor minimum allowable thickness after refinishing 24.89 mm (0.980 in).
 - RPO JM3 (Front Rotor), Brake rotor discard thickness 24.51 mm (0.965 in).
4. If the lowest thickness measurement of the brake rotor is above the minimum allowable thickness after refinishing specification; the rotor may be able to be refinished, depending upon surface and wear conditions which may be present.
 5. If the lowest thickness measurement of the brake rotor is at or below the minimum allowable thickness after refinishing specification; the rotor may not be refinished.
 6. If the lowest thickness measurement of the brake rotor is at or below the discard thickness specification; the rotor requires replacement.

BRAKE ROTOR SURFACE AND WEAR INSPECTION

Tools Required

J 8001 Dial Indicator, or equivalent. See **Special Tools and Equipment**.

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

1. With the tire and wheel assemblies removed and the brake rotors retained by wheel lug nuts, clean the braking surfaces of the brake rotor with denatured alcohol or an equivalent approved brake cleaner.
2. Inspect the braking surfaces of the brake rotor for the following braking surface conditions:

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- Heavy rust and/or pitting

Light surface rust can be removed with an abrasive disc; heavy surface rust and/or pitting must be removed by refinishing the rotor.

- Cracks and/or heat spots
- Excessive blueing discoloration

3. If the braking surfaces of the brake rotor exhibits one or more of the braking surface conditions, the rotor requires refinishing or replacement.

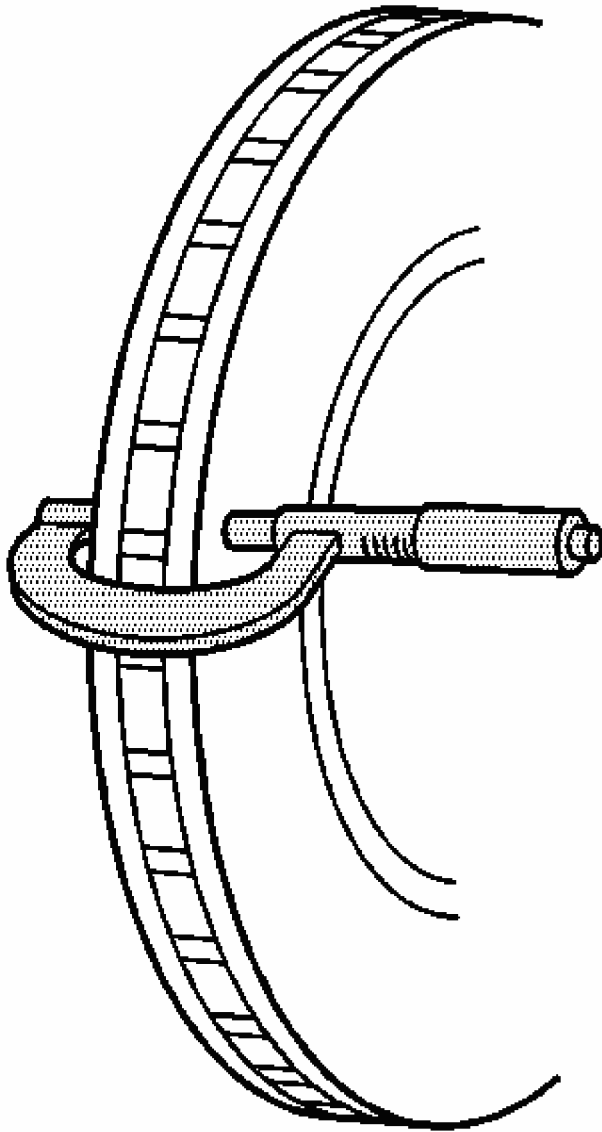


Fig. 2: Measuring Brake Rotor Thickness
Courtesy of GENERAL MOTORS CORP.

4. Using a micrometer calibrated in ten-thousandths of an inch, measure and record the thickness variation of the brake rotor at four or more points, around the rotor.

Ensure that the measurements are only taken within the brake pad lining contact area and that the micrometer is positioned the same distance from the outside edge of the rotor for each measurement.

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5. Compare the thickness variation recorded to the following specification:

Specification: Brake rotor maximum allowable thickness variation 0.0254 mm (0.001 in).

6. If the brake rotor thickness variation exceeds the specification, the rotor requires refinishing or replacement.
7. Using the micrometer, measure and record any grooves present on the rotor braking surface.
8. Compare the groove or scoring depth recorded to the following specification:

Specification: Brake rotor maximum allowable scoring 1.50 mm (0.059 in).

9. If the brake rotor scoring depth exceeds the specification, or if an excessive amount of scoring is present, the rotor requires refinishing or replacement.

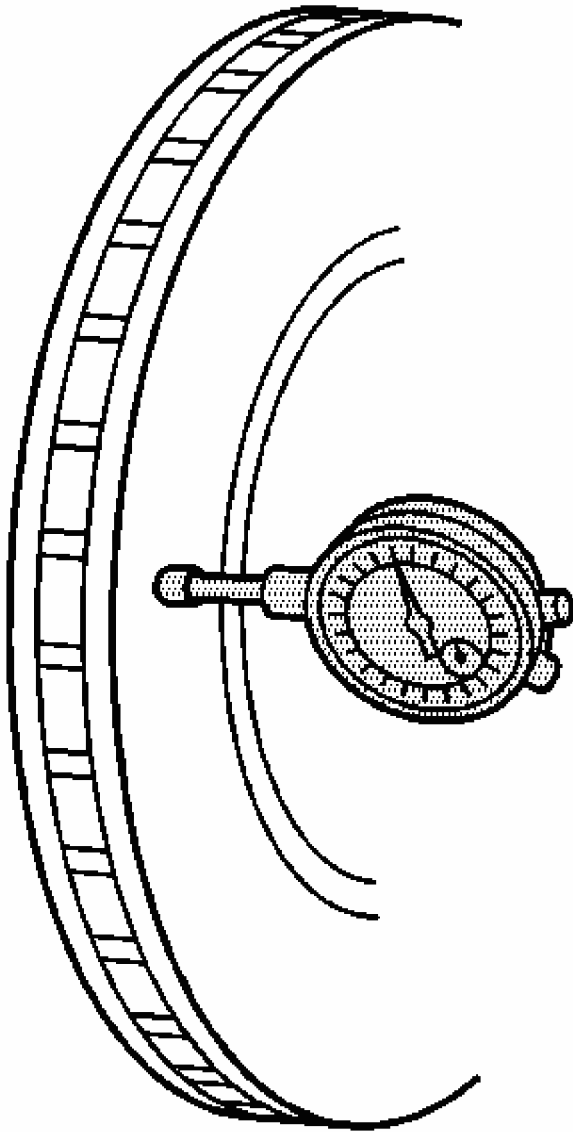


Fig. 3: Checking Brake Rotor Runout
Courtesy of GENERAL MOTORS CORP.

10. Mount a dial indicator, **J 8001** or equivalent, and position the indicator button so it contacts the brake rotor at a 90 degree angle, approximately 13 mm (0.5 in) from the rotor's outer edge.
11. Measure and record the lateral runout of the brake rotor.
 - A. Rotate the rotor until the lowest reading is displayed on the indicator dial, then zero the dial.

- B. Rotate the rotor until the highest reading is displayed on the dial.
 - C. Measure and record the amount of sealed wheel bearing play, then subtract the bearing play from the lateral runout recorded to obtain the true amount of lateral runout.
12. Compare the lateral runout of the brake rotor to the following specification:
- Specification:** Brake rotor maximum allowable lateral runout 0.051 mm (0.002 in).
13. If the brake rotor lateral runout exceeds the specification, the rotor requires refinishing or replacement.

BRAKE PAD INSPECTION

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

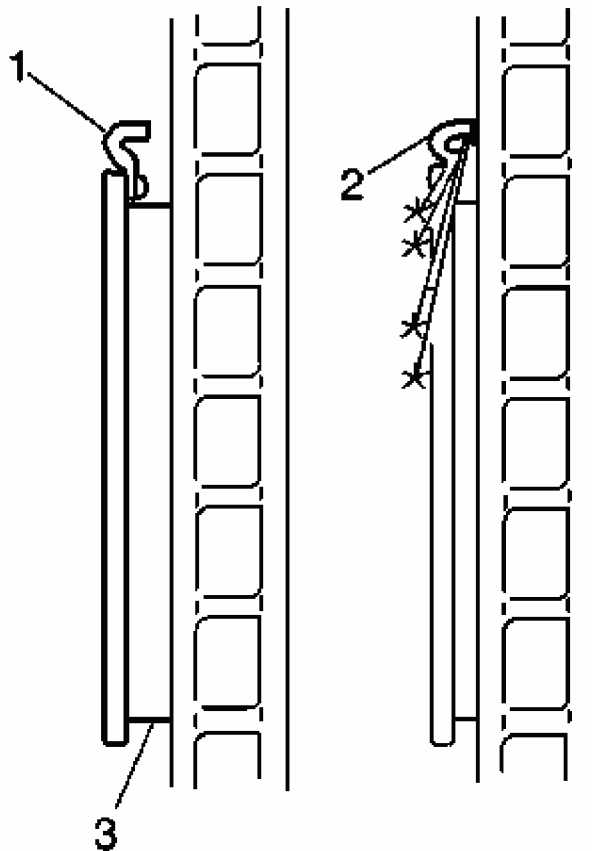


Fig. 4: View Of Brake Pads & Audible Wear Sensors
Courtesy of GENERAL MOTORS CORP.

- Inspect the disc brake pads at regular intervals, or whenever the tire and wheel assemblies are removed from the vehicle.
- If replacement is necessary, always replace disc brake pads in axle sets.
- Inspect both edges of the disc brake pad friction surfaces (3). The highest rate of wear normally occurs at the trailing edge of the disc brake pads.
- Inspect the thickness of the disc brake pads (3) in order to ensure that they have not worn prematurely. The disc brake pad wear should be approximately even per axle set.
- Both front and rear disc brake pads have integral, audible wear sensors (1). When the disc brake pad wear reaches the minimum allowable thickness, the wear sensor contacts the disc brake rotor (2). The wear indicator will then produce an audible, high-pitched warning noise during wheel rotation.
- Replace the disc brake pads when the friction surface (3) is worn to within 0.76 mm (0.030 in) of the mounting plates.
- Remove the brake calipers and inspect the friction surfaces of the inner and outer disc brake pads to ensure that they are level. Place the disc brake pad friction surfaces together and measure the gap between the surfaces. If more than 0.13 mm (0.005 in) gap exists midway between the length of the disc brake pads, replace the disc brake pads.
- Verify that any disc brake pad shims that may be required are in place and not damaged or excessively corroded. Replace any missing or damaged shims in order to preserve proper disc brake performance.
- Replace the disc brake pads if any have separated from the mounting plates.
- Inspect the disc brake pads friction surfaces for cracks, fractures, or damage which may cause noise or otherwise impair disc brake performance.

BRAKE CALIPER INSPECTION

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

CAUTION: Refer to Brake Fluid Irritant Caution in Cautions and Notices.

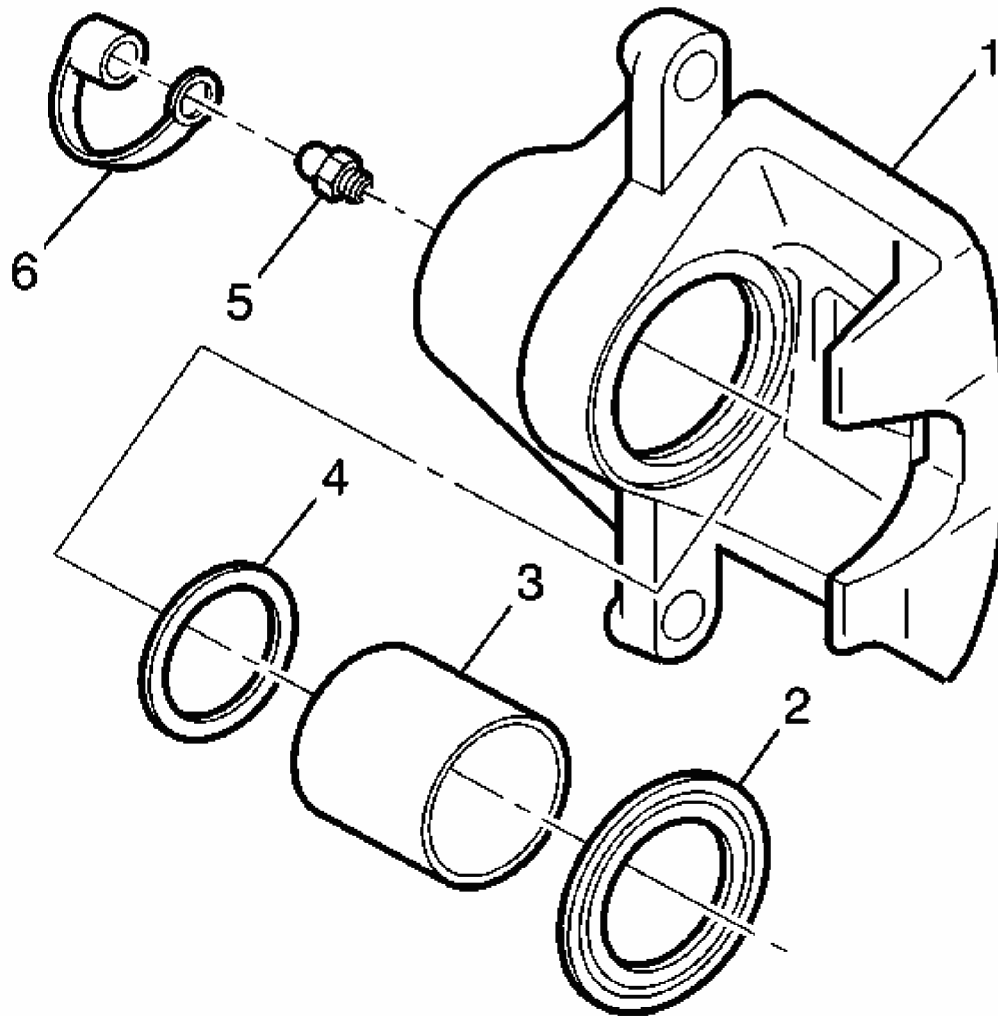


Fig. 5: Exploded View Of Brake Caliper
Courtesy of GENERAL MOTORS CORP.

1. Inspect the brake caliper housing (1) for cracks, excess wear, and/or damage. If any of these conditions are present, the brake caliper requires replacement.
2. Inspect the caliper piston dust boot seal (2) for cracks, tears, cuts, deterioration and/or improper seating in the caliper body. If any of these conditions are present, the brake caliper requires overhaul or replacement.
3. Inspect for brake fluid leakage around the caliper piston dust boot seal (2) and on the disc brake pads. If there is any evidence of brake fluid leakage, the brake caliper requires overhaul or replacement.

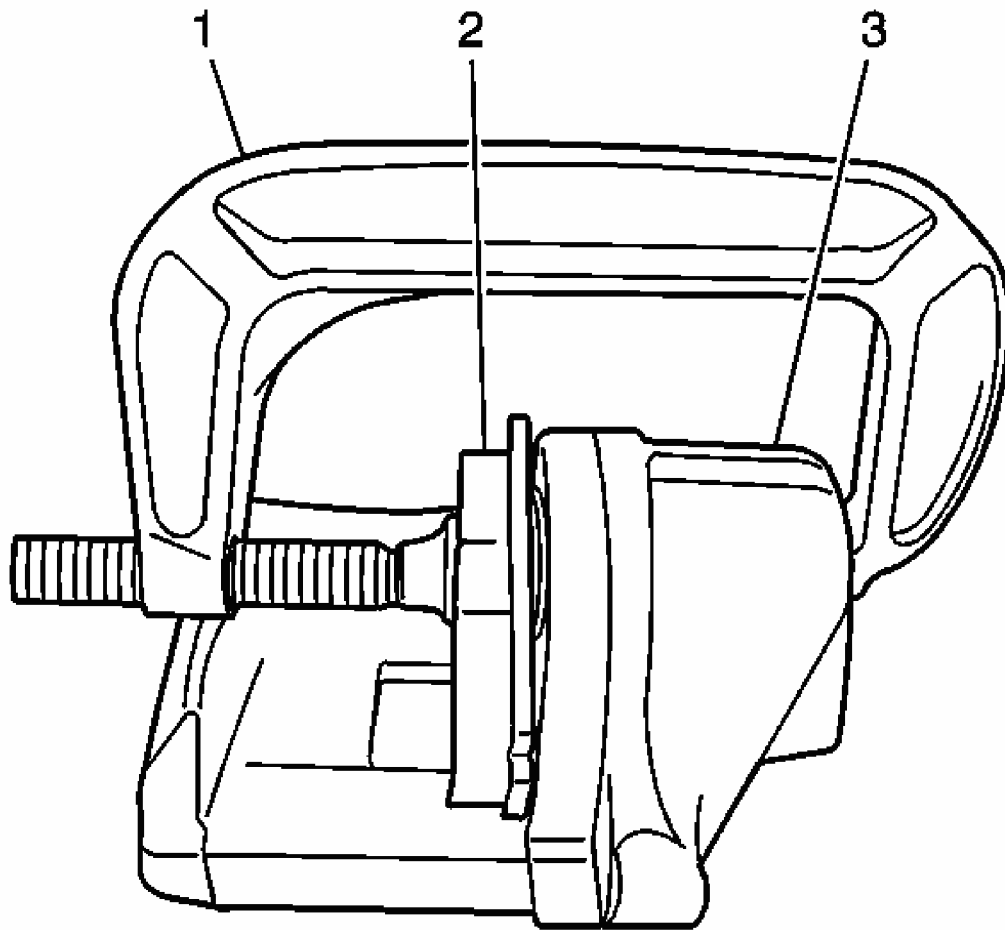


Fig. 6: Compressing Caliper Piston
Courtesy of GENERAL MOTORS CORP.

4. Inspect for smooth and complete travel of the caliper pistons into the caliper bores:

The movement of the caliper pistons into the caliper bores should be smooth and even. If the caliper piston is frozen or difficult to bottom, the caliper requires overhaul or replacement.

- For single piston caliper applications, insert a discarded inner brake pad (2) or block of wood in front of the piston. Using a large C-clamp (1) installed over the body of the caliper (3) and against the brake pad or block of wood, slowly bottom the piston in the bore.
- For dual piston caliper applications, insert a discarded inner brake pad (2) or block of wood in front of the pistons. Using 2 large C-clamps (1) installed over the body

of the caliper (3) and against the brake pad or block of wood, slowly bottom the pistons evenly into the bores.

DISC BRAKE MOUNTING AND HARDWARE INSPECTION - FRONT

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

CAUTION: Refer to Brake Fluid Irritant Caution in Cautions and Notices.

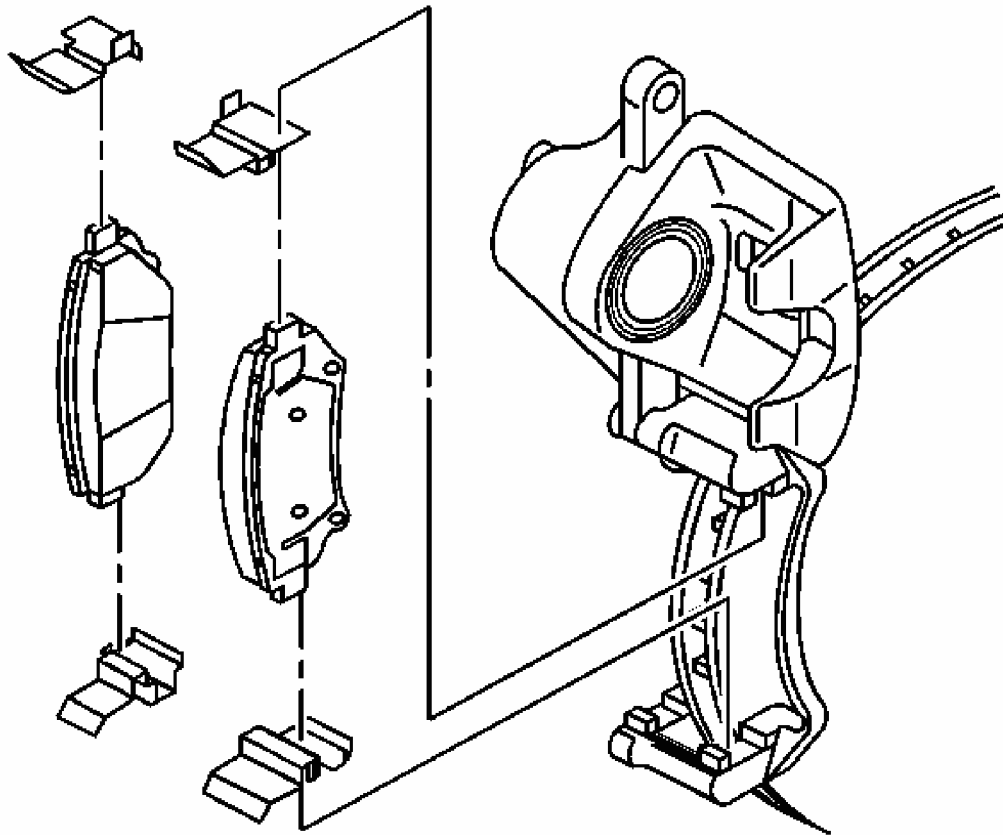


Fig. 7: View Of Brake Pads & Caliper Bracket - Rear
Courtesy of GENERAL MOTORS CORP.

1. With the disc brake caliper removed, inspect the disc brake pad mounting hardware for the following:
 - Missing mounting hardware

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- Excessive corrosion
 - Bent mounting tabs
 - Looseness at the caliper mounting bracket
 - Looseness at the disc brake pads
2. If any of the conditions listed are found, replace the disc brake pad mounting hardware. Refer to **Disc Brake Hardware Replacement - Front (Dual Piston)** or **Disc Brake Hardware Replacement - Front (Single Piston)**.
 3. With the disc brake pads held firmly in place on the brake caliper mounting bracket, ensure that the pads slide easily on the mounting hardware without binding.
 4. Inspect the brake caliper housing bolts by gently pulling outward, without disengaging the brake caliper from the boots, pushing inward, and observe for the following:
 - Binding
 - Seizing
 - Looseness in the caliper mounting bracket
 - Bent or damaged caliper bolts
 - Cracked or torn boots
 - Missing boots
 - Bent or damaged caliper mounting bracket
 5. If any of the conditions listed are found, the brake caliper hardware requires replacement. Refer to **Disc Brake Hardware Replacement - Front (Dual Piston)** or **Disc Brake Hardware Replacement - Front (Single Piston)**.

DISC BRAKE MOUNTING AND HARDWARE INSPECTION - REAR

CAUTION: Refer to **Brake Dust Caution** in Cautions and Notices.

CAUTION: Refer to **Brake Fluid Irritant Caution** in Cautions and Notices.

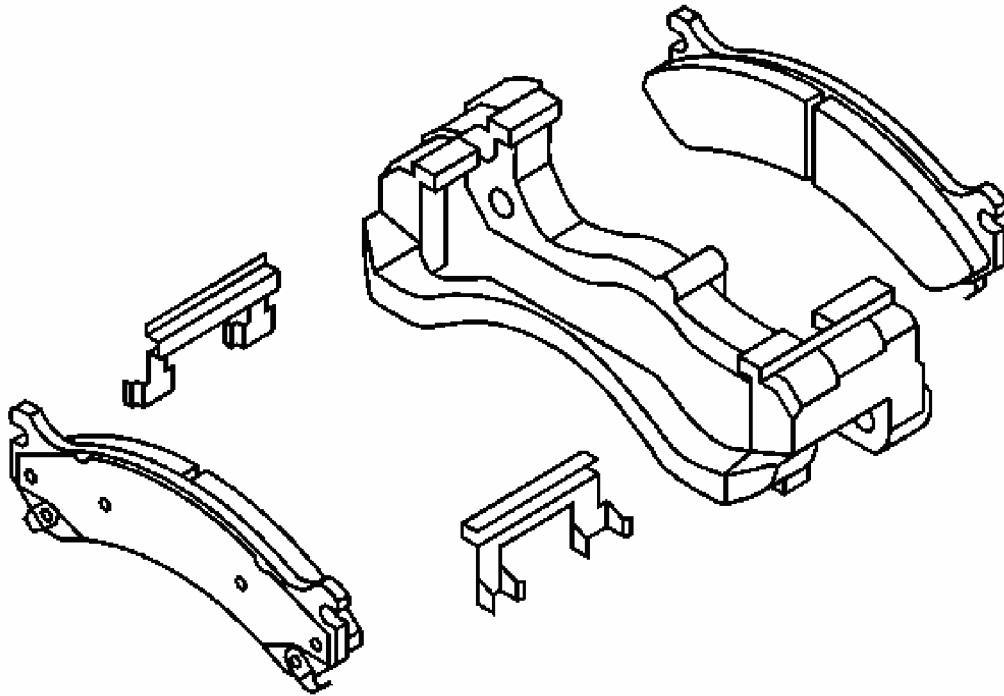


Fig. 8: View Of Disc Brake Pads & Brake Caliper Mounting Bracket
Courtesy of GENERAL MOTORS CORP.

1. With the disc brake caliper removed, inspect the disc brake pad mounting hardware for the following:
 - Missing mounting hardware
 - Excessive corrosion
 - Bent mounting tabs
 - Looseness at the caliper mounting bracket
 - Looseness at the disc brake pads
2. If any of the conditions listed are found, replace the disc brake pad mounting hardware. Refer to **Disc Brake Hardware Replacement - Front (Dual Piston)** or **Disc Brake Hardware Replacement - Front (Single Piston)**.
3. With the disc brake pads held firmly in place on the brake caliper mounting bracket, ensure that the pads slide easily on the mounting hardware without binding.
4. Inspect the brake caliper housing bolts by gently pulling outward, without disengaging the brake caliper housing bolts from the boots, pushing inward, and observe for the following:
 - Binding

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- Seizing
 - Looseness in the caliper mounting bracket
 - Bent or damaged caliper bolts
 - Cracked or torn boots
 - Missing boots
 - Bent or damaged caliper mounting bracket
5. If any of the conditions listed are found, the brake caliper hardware requires replacement. Refer to **Disc Brake Hardware Replacement - Front (Dual Piston)** or **Disc Brake Hardware Replacement - Front (Single Piston)**.

REPAIR INSTRUCTIONS

BRAKE PADS REPLACEMENT - FRONT (SINGLE PISTON CALIPER)

Removal Procedure

CAUTION: Refer to **Brake Dust Caution** in Cautions and Notices.

CAUTION: Refer to **Brake Fluid Irritant Caution** in Cautions and Notices.

NOTE: Refer to **Brake Fluid Effects on Paint and Electrical Components Notice** in Cautions and Notices.

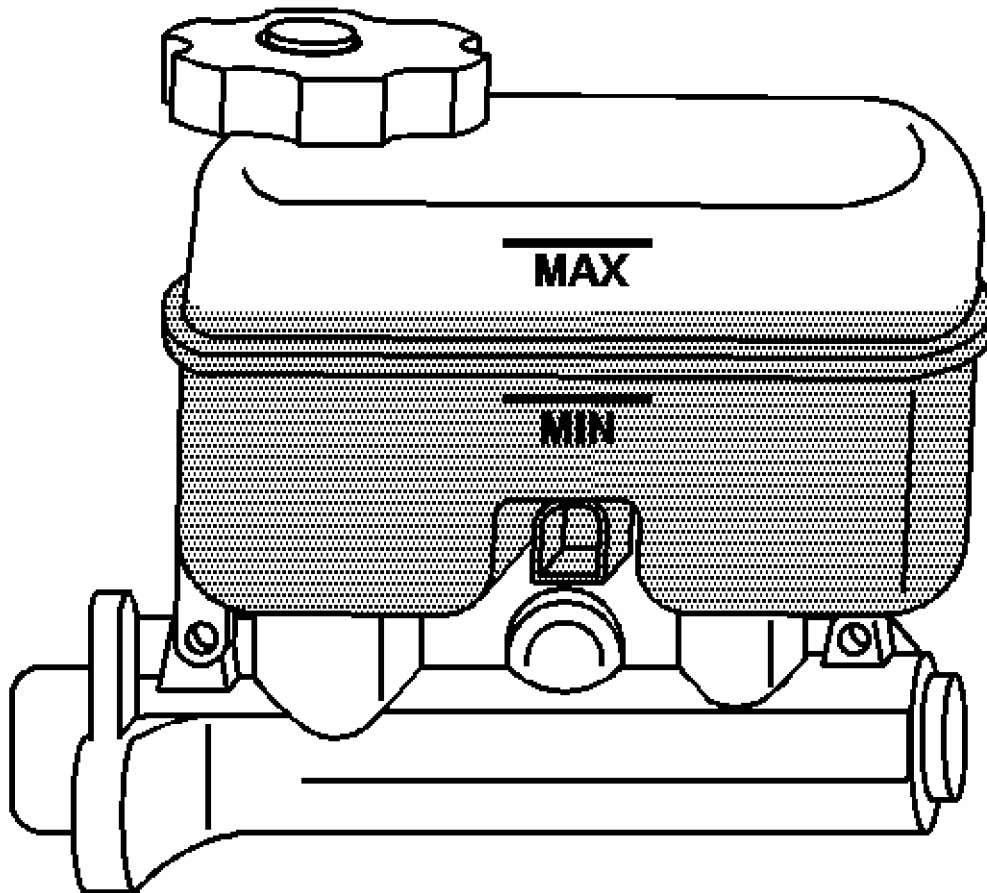


Fig. 9: View Of Half-Full Master Cylinder Reservoir
Courtesy of GENERAL MOTORS CORP.

1. Inspect the fluid level in the brake master cylinder reservoir.
2. If the brake fluid level is midway between the maximum-full point and the minimum allowable level, no brake fluid needs to be removed from the reservoir before proceeding.

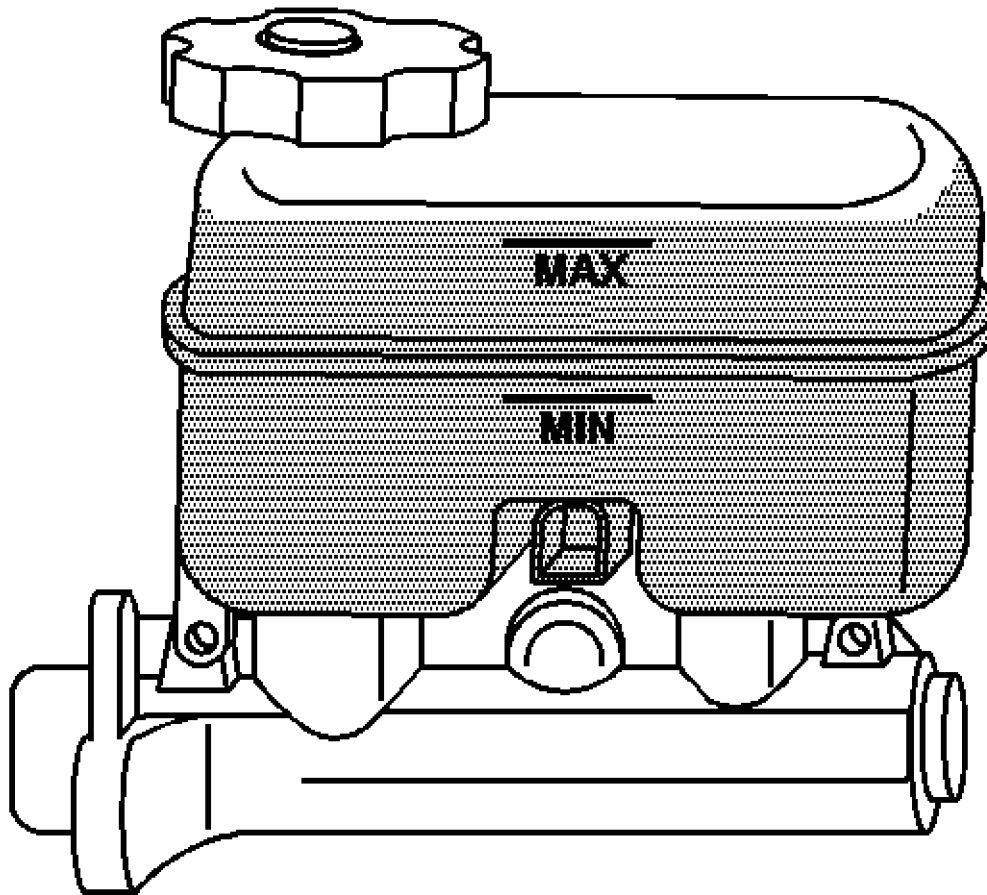


Fig. 10: View Of Full Master Cylinder Reservoir MAX And MIN Marks
Courtesy of GENERAL MOTORS CORP.

3. If the brake fluid level is higher than midway between the maximum-full point and the minimum allowable level, remove brake fluid to the midway point before proceeding.
4. Raise the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
5. Remove the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.

IMPORTANT: The following service procedure is for the vehicles that have had the brake rotor retainers removed.

6. Install and hand tighten a wheel lug nut to hold the brake rotor in place.

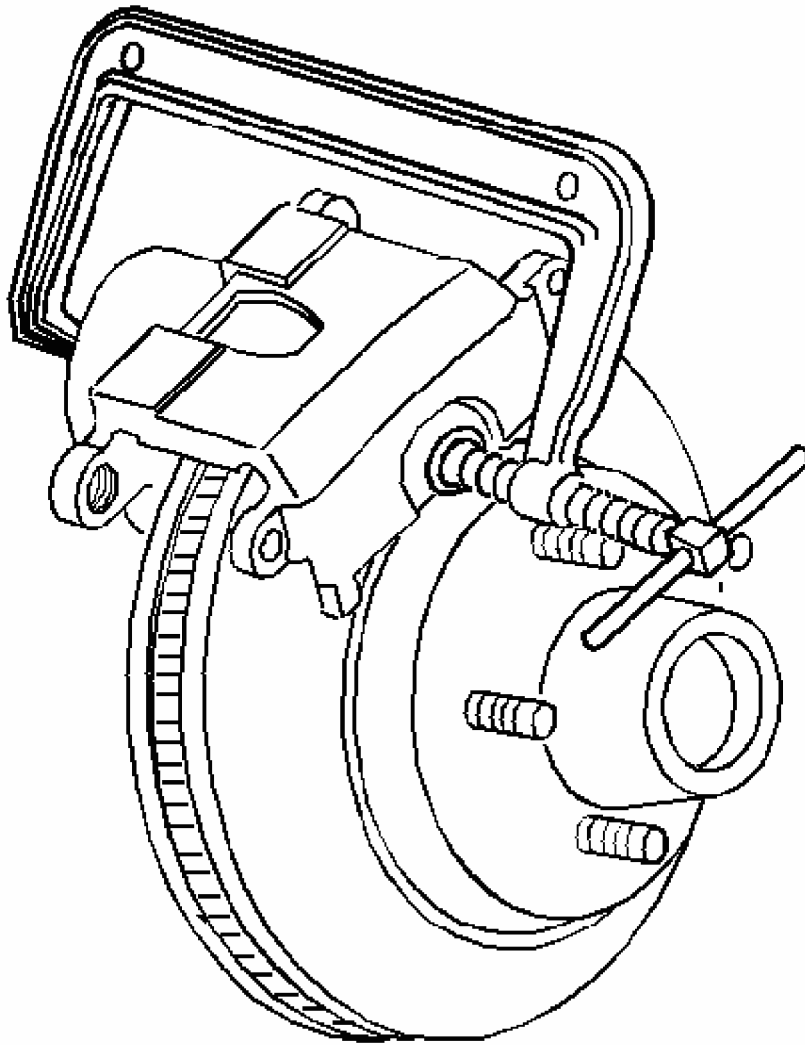


Fig. 11: Compressing Caliper Piston
Courtesy of GENERAL MOTORS CORP.

7. Compress the front caliper piston.
 1. Install a large C-clamp over the top of the brake caliper housing and against the back of the outboard pad.
 2. Slowly tighten the C-clamp until the piston is fully seated in the caliper bore.
 3. Remove the C-clamp from the brake caliper.

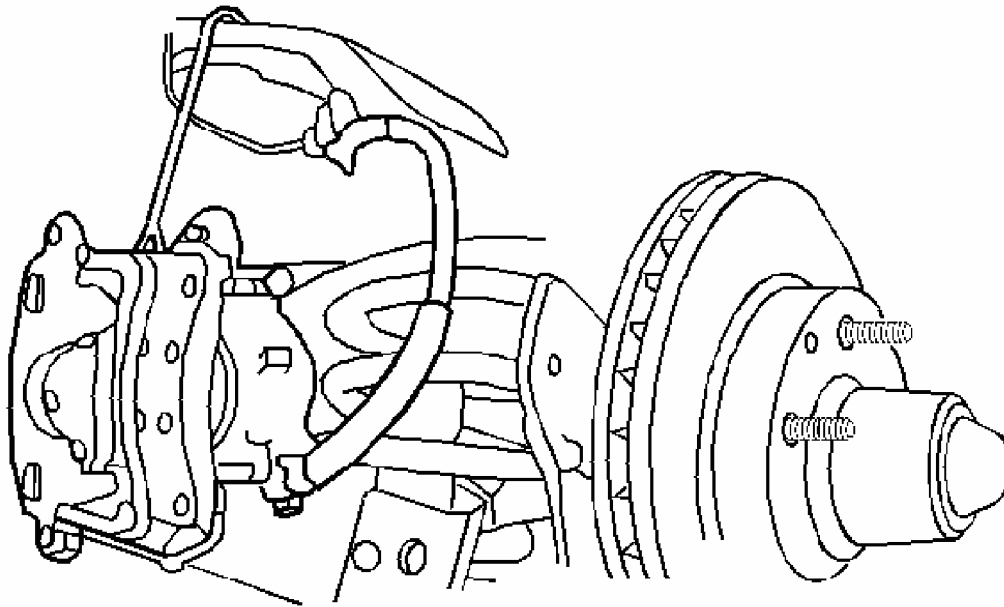


Fig. 12: View Of Brake Assembly
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Brake Caliper Notice in Cautions and Notices.

IMPORTANT: DO NOT disconnect the hydraulic brake flexible hose from the caliper.

8. Remove the brake caliper assembly from the mounting bracket. Refer to Brake Caliper Replacement - Front (Dual Piston).
9. Support the brake caliper with heavy mechanics wire or equivalent.

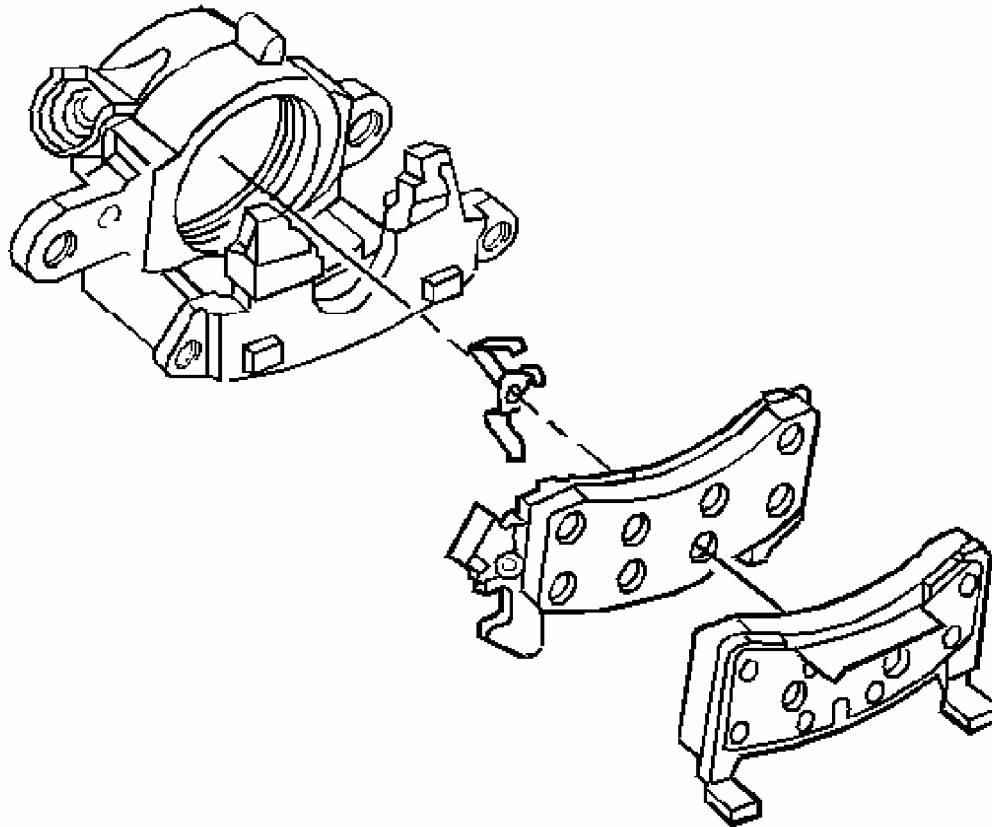


Fig. 13: Exploded View Of Brake Pad Assembly
Courtesy of GENERAL MOTORS CORP.

10. Remove the inboard brake pad.
11. Remove the retainer spring.
12. Remove the outboard brake pad.
13. Inspect the disc brake mounting and hardware. Refer to **Disc Brake Mounting and Hardware Inspection - Front**.
14. Inspect the disc brake caliper. Refer to **Brake Caliper Inspection**.
15. Inspect the caliper bolts for corrosion or damage. Do not attempt to polish away any corrosion. If corrosion is found, use new parts, including bushings, when installing the caliper.

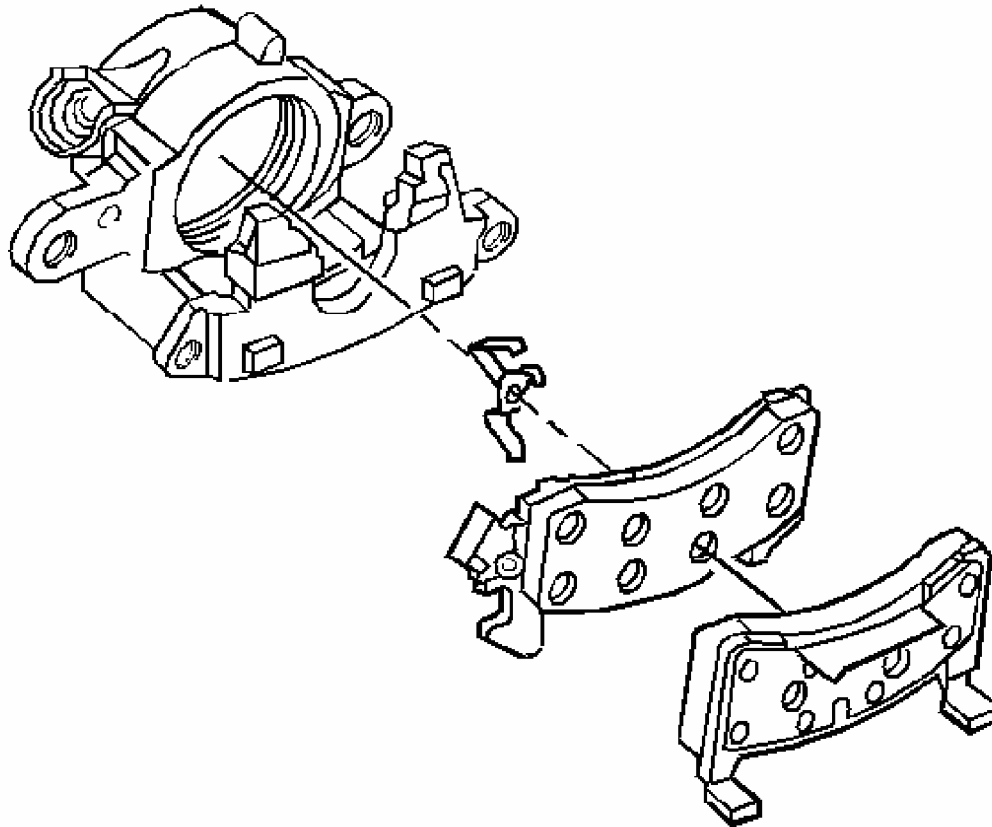


Fig. 14: Exploded View Of Brake Pad Assembly
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Before installing new brake pads, clean the outside surface of the caliper boot with denatured alcohol.

1. Install the outboard lining.
2. Install the retainer spring on the inboard brake lining.
3. Install inboard lining in the caliper.

NOTE: Refer to Installing Hoses without Twists or Bends Notice in Cautions and Notices.

4. Install the caliper. Refer to Brake Caliper Replacement - Front (Dual Piston).
5. Install the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation in Tires and Wheels.

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6. Lower the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
7. With the engine OFF, gradually apply the brake pedal to approximately 2/3 of its travel distance.
8. Slowly release the brake pedal.
9. Wait 15 seconds, then repeat steps 6-7 until a firm brake pedal is obtained. This will properly seat the brake caliper pistons and brake pads.
10. Fill the brake master cylinder to the proper level. Refer to **Master Cylinder Reservoir Filling** in Hydraulic Brakes.
11. Burnish the new brake pads. Refer to **Burnishing Pads and Rotors**.

BRAKE PADS REPLACEMENT - REAR

Removal Procedure

CAUTION: Refer to **Brake Dust Caution** in Cautions and Notices.

CAUTION: Refer to **Brake Fluid Irritant Caution** in Cautions and Notices.

NOTE: Refer to **Brake Fluid Effects on Paint and Electrical Components Notice** in Cautions and Notices.

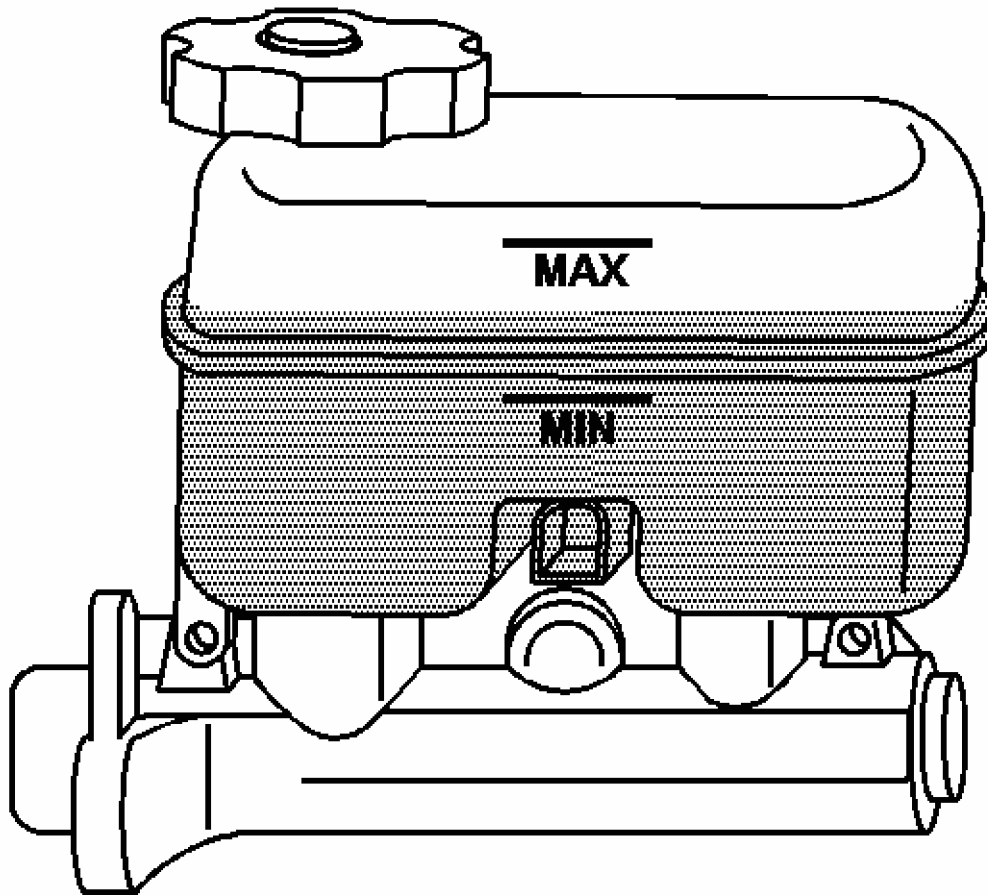


Fig. 15: View Of Half-Full Master Cylinder Reservoir
Courtesy of GENERAL MOTORS CORP.

1. Inspect the brake fluid level in the brake master cylinder reservoir.
2. If the brake fluid is midway between the maximum fullpoint and the minimum allowable level, no brake fluid needs to be removed from the reservoir before proceeding.

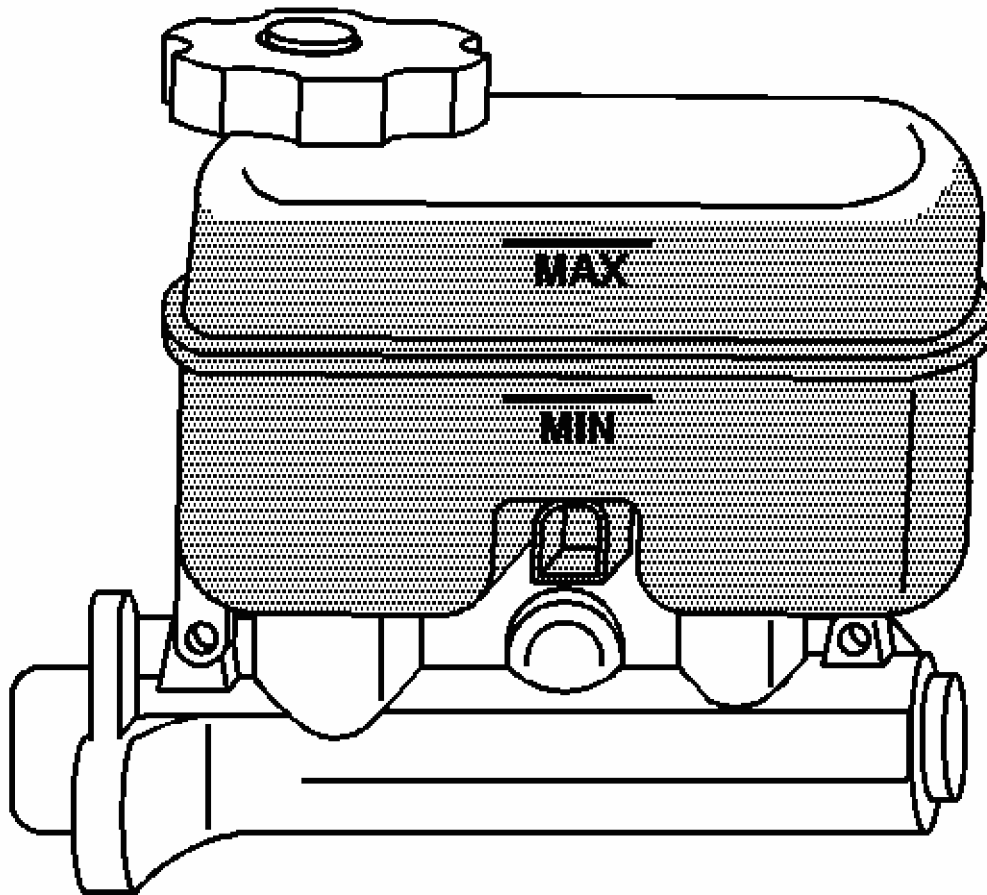


Fig. 16: View Of Full Master Cylinder Reservoir MAX And MIN Marks
Courtesy of GENERAL MOTORS CORP.

3. If the brake fluid level is higher than midway between the maximum-full and the minimum allowable level, using the appropriate tool, remove the brake fluid to the midway point before proceeding.
4. Raise the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
5. Remove the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.

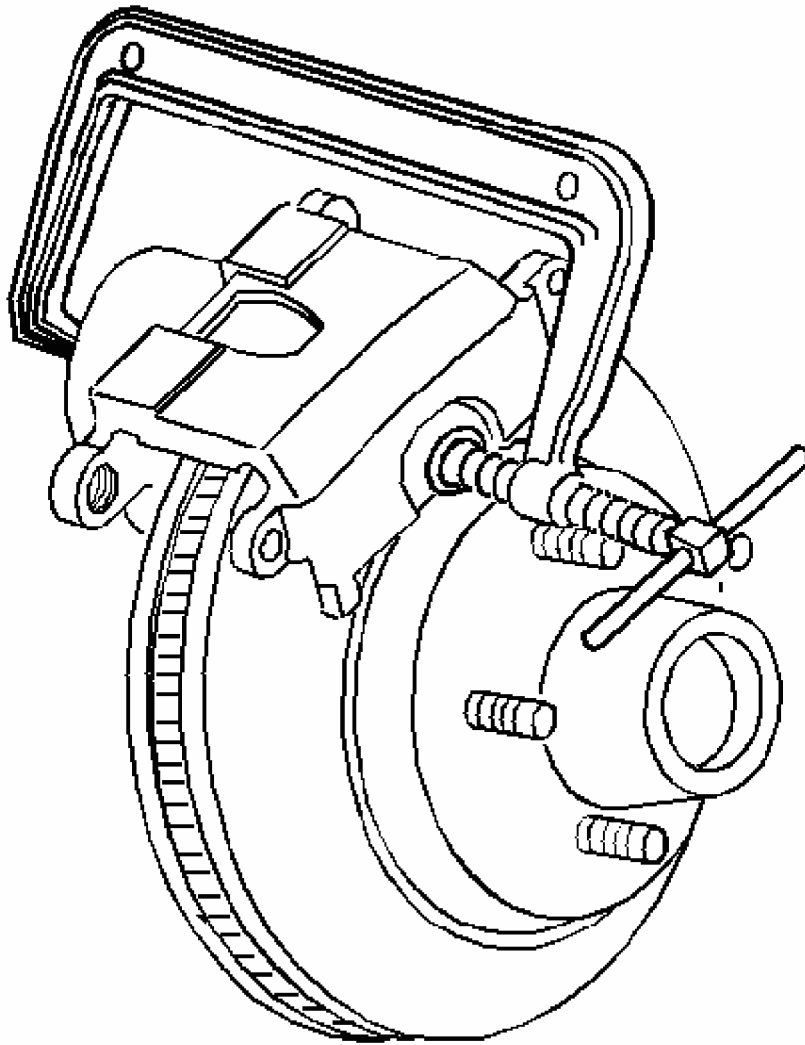


Fig. 17: Compressing Caliper Piston
Courtesy of GENERAL MOTORS CORP.

6. Install a large C-clamp over the top of the brake caliper housing and against the back of the outboard brake pad.
7. Slowly tighten the C-clamp until the piston is fully seated in the caliper bore.
8. Remove the C-clamp from the brake caliper.

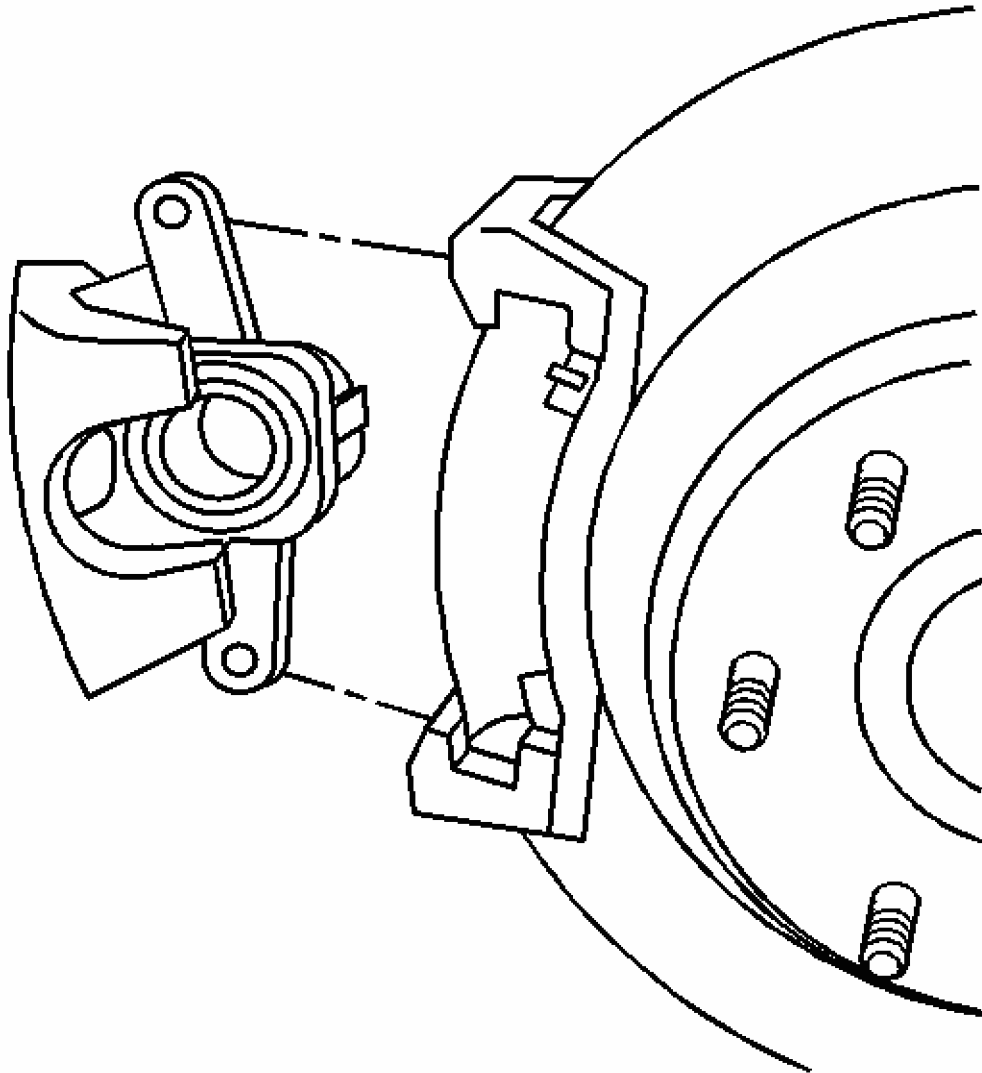


Fig. 18: View Of Caliper To Caliper Mounting Bracket
Courtesy of GENERAL MOTORS CORP.

9. Remove the brake caliper assembly from the mounting bracket. Refer to **Brake Caliper Replacement - Rear**.
10. Using denatured alcohol, clean the brake pads and related parts.
11. Using non-lubricated, filtered compressed air, dry the brake pads and related parts.

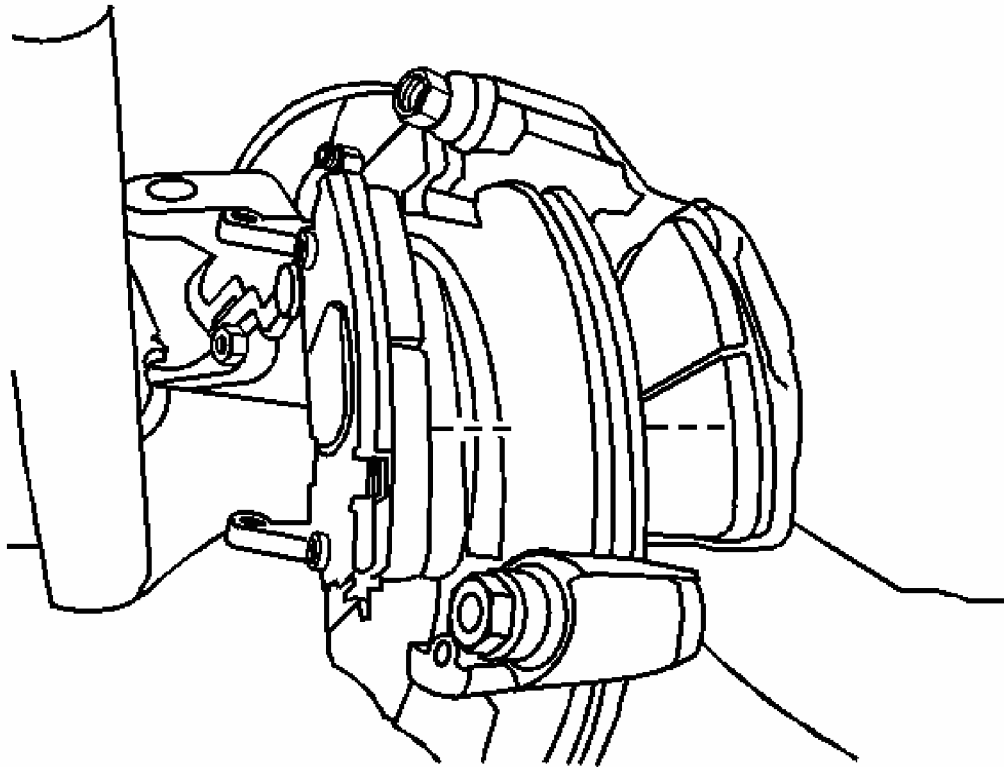


Fig. 19: Caliper Mounting View
Courtesy of GENERAL MOTORS CORP.

12. Remove the rear brake pads.

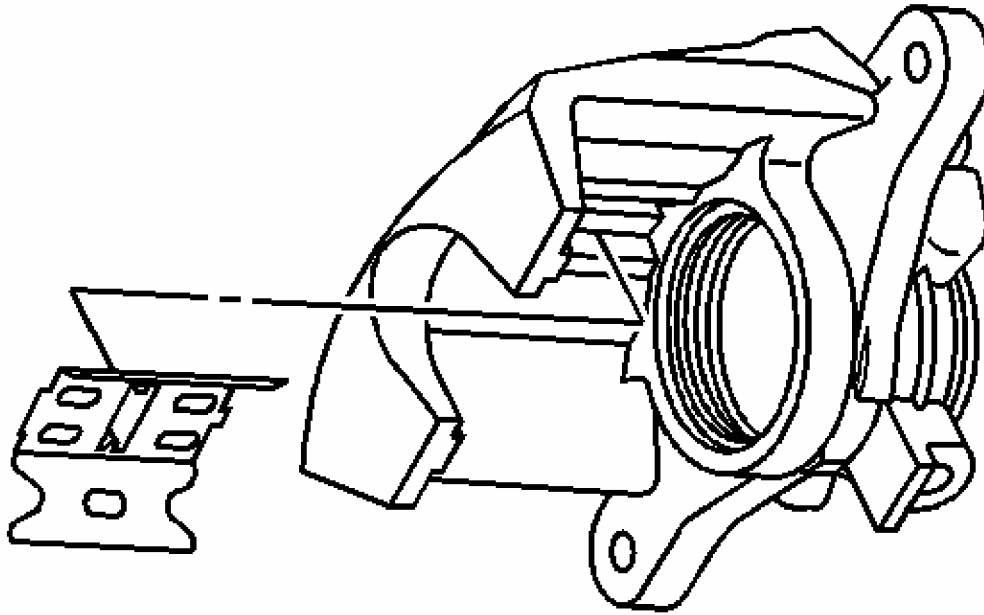


Fig. 20: View Of Caliper

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: DO NOT reuse the rear brake pad anti/rattle spring. Used the NEW brake pad anti/rattle spring

13. Remove the rear brake pad anti/rattle spring from the brake caliper.

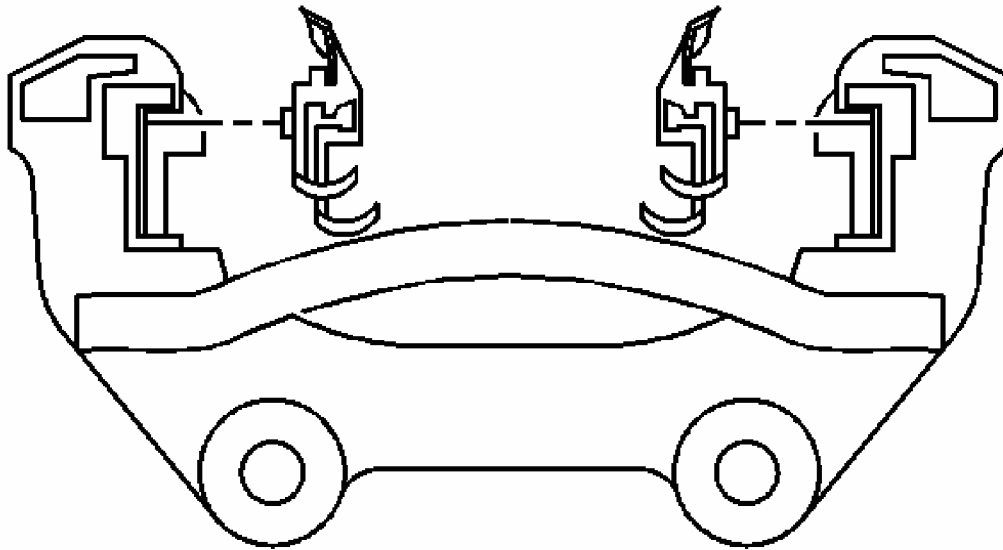


Fig. 21: View Of Caliper Bracket
Courtesy of GENERAL MOTORS CORP.

14. Remove the anti/rattles springs from the mounting bracket.
15. Inspect the brake caliper. Refer to **Brake Caliper Inspection**.

Installation Procedure

IMPORTANT: When replacing the rear brake pads, DO NOT reuse the old anti/rattle springs use supplied in the brake pad kit.

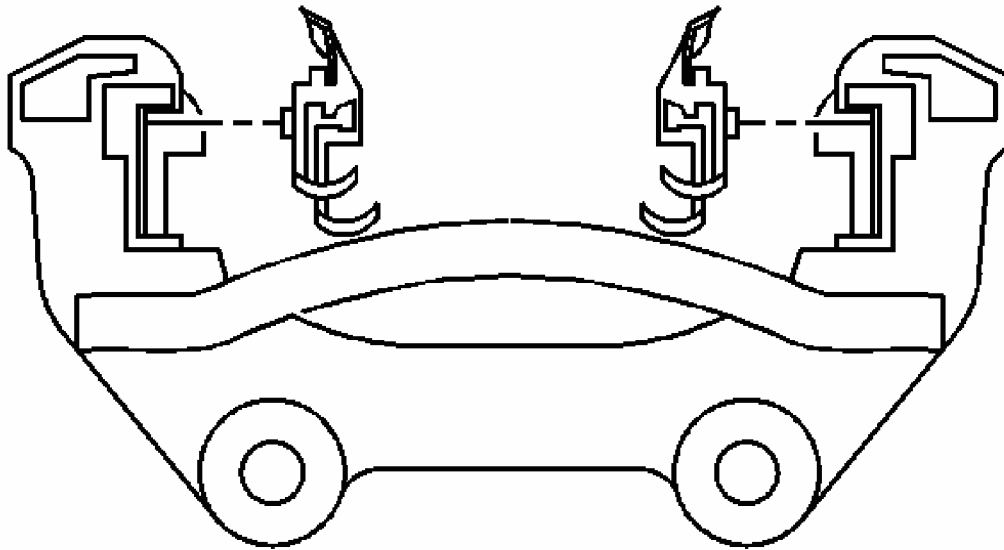


Fig. 22: View Of Caliper Bracket
Courtesy of GENERAL MOTORS CORP.

1. Install the NEW anti/rattle springs on the mounting bracket.

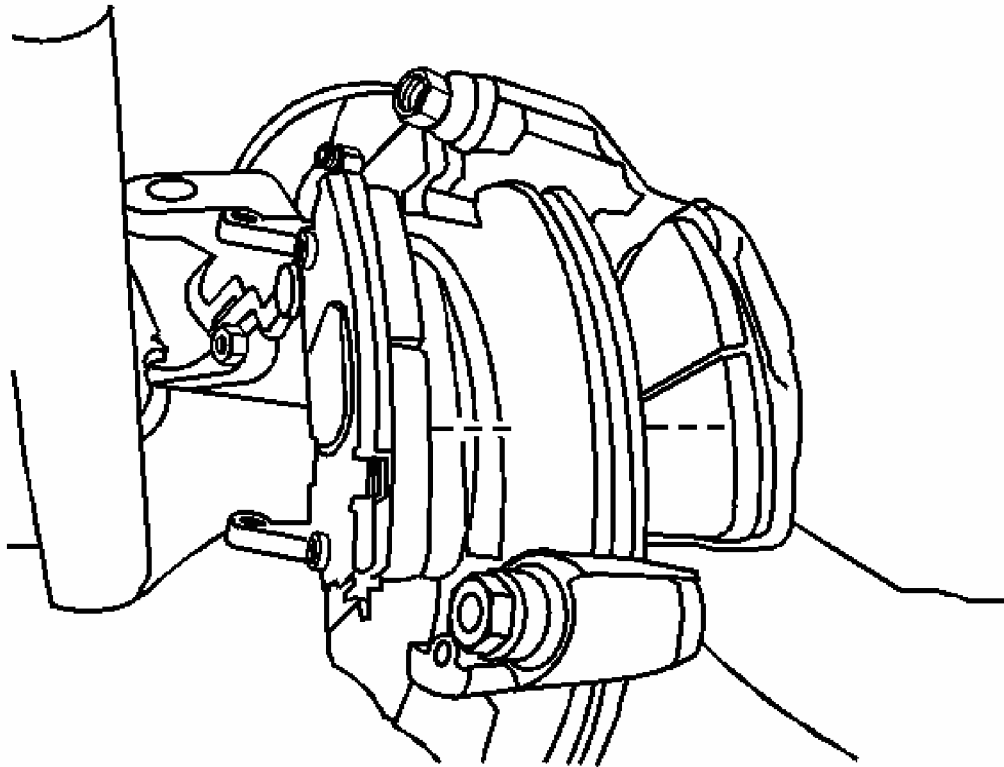


Fig. 23: Caliper Mounting View
Courtesy of GENERAL MOTORS CORP.

2. Install the rear brake pads on the mounting bracket.

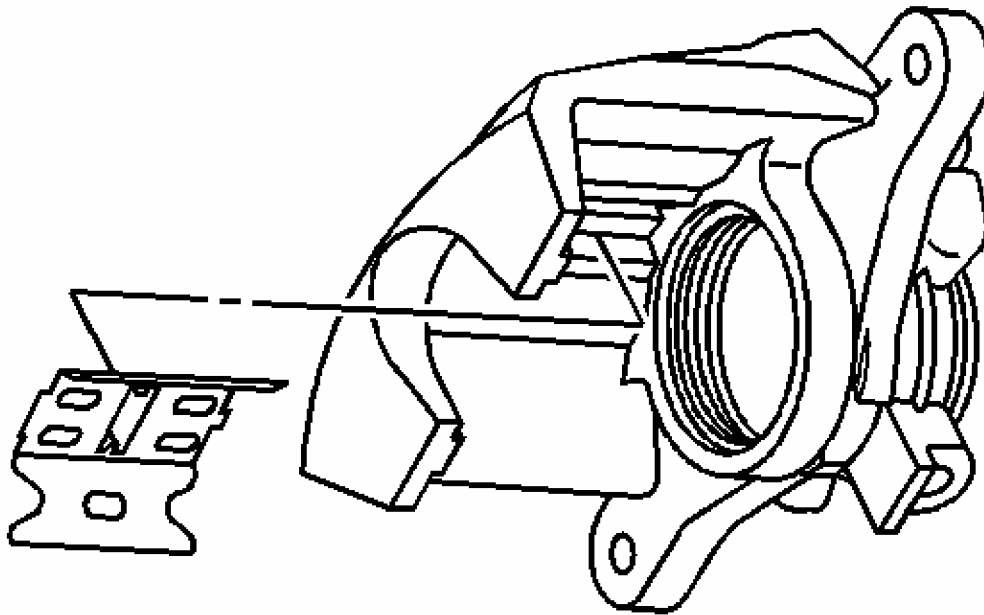


Fig. 24: View Of Caliper
Courtesy of GENERAL MOTORS CORP.

3. Install the anti/rattle spring on the rear brake caliper.

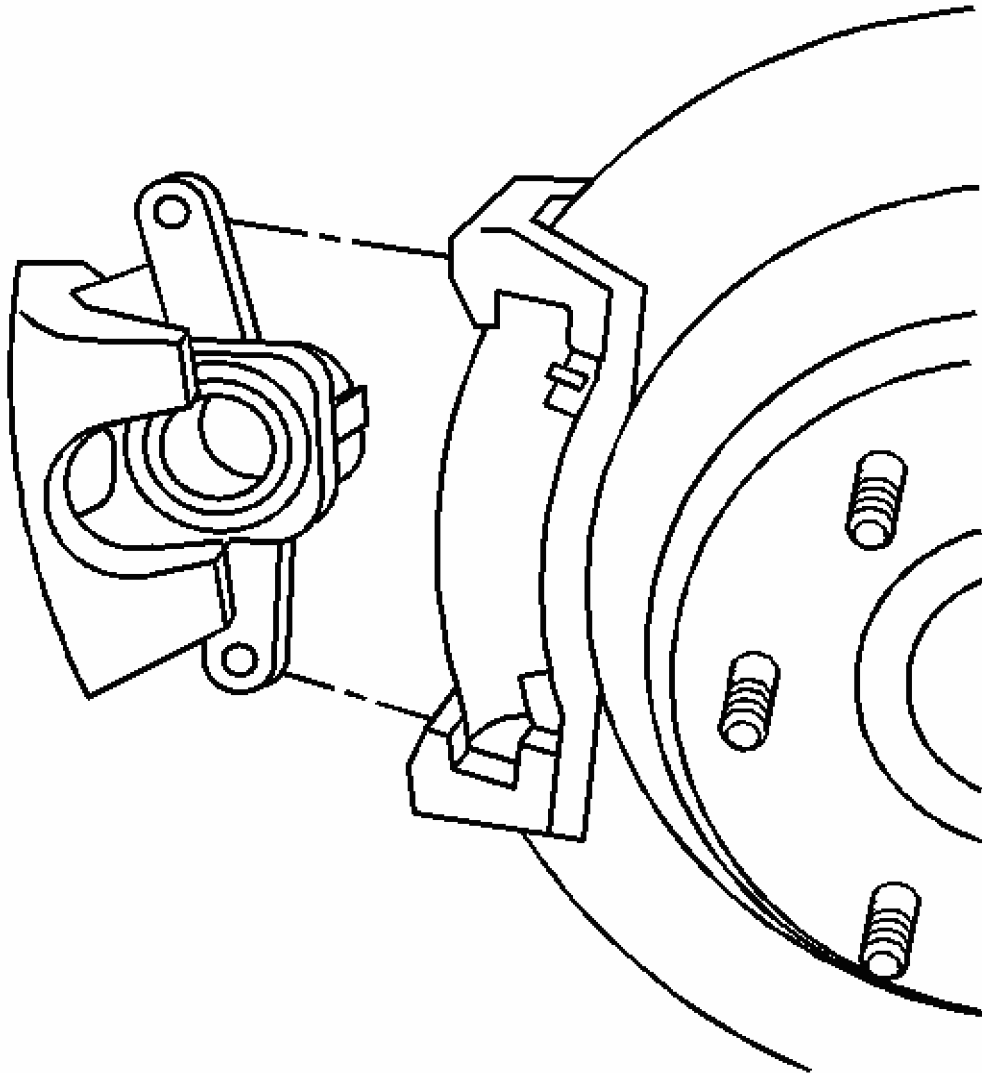


Fig. 25: View Of Caliper To Caliper Mounting Bracket
Courtesy of GENERAL MOTORS CORP.

4. Install the brake caliper assembly on the mounting bracket. Refer to **Brake Caliper Replacement - Rear**.
5. Lower the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
6. Fill the brake master cylinder to the proper level. Refer to **Master Cylinder Reservoir Filling** in Hydraulic Brakes.
7. With the engine OFF, gradually apply the brake pedal to approximately 2/3 of its travel distance.

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8. Slowly release the brake pedal.
9. Wait 15 seconds, then repeat steps 5-6 until a firm brake pedal is obtained. This will properly seat the brake caliper pistons and brake pads.
10. Burnish the new brake pads. Refer to **Burnishing Pads and Rotors**

BURNISHING PADS AND ROTORS

CAUTION: Road test a vehicle under safe conditions and while obeying all traffic laws. Do not attempt any maneuvers that could jeopardize vehicle control. Failure to adhere to these precautions could lead to serious personal injury and vehicle damage.

CAUTION: Refer to **Brake Dust Caution** in Cautions and Notices.

Burnishing the brake pads and brake rotors is necessary in order to ensure that the braking surfaces are properly prepared after service has been performed on the disc brake system.

This procedure should be performed whenever the disc brake rotors have been refinished or replaced, and/or whenever the disc brake pads have been replaced.

1. Select a smooth road with little or no traffic.
2. Accelerate the vehicle to 48 km/h (30 mph).

IMPORTANT: Use care to avoid overheating the brakes while performing this step.

3. Using moderate to firm pressure, apply the brakes to bring the vehicle to a stop. Do not allow the brakes to lock.
4. Repeat steps 2 and 3 until approximately 20 stops have been completed. Allow sufficient cooling periods between stops in order to properly burnish the brake pads and rotors.

BRAKE CALIPER REPLACEMENT - FRONT (DUAL PISTON)

Removal Procedure

CAUTION: Refer to **Brake Dust Caution** in Cautions and Notices.

CAUTION: Refer to **Brake Fluid Irritant Caution** in Cautions and Notices.

NOTE: Refer to Brake Fluid Effects on Paint and Electrical Components Notice in Cautions and Notices.

1. Raise the vehicle. Refer to Lifting and Jacking the Vehicle in General Information.
2. Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation in Tires and Wheels.

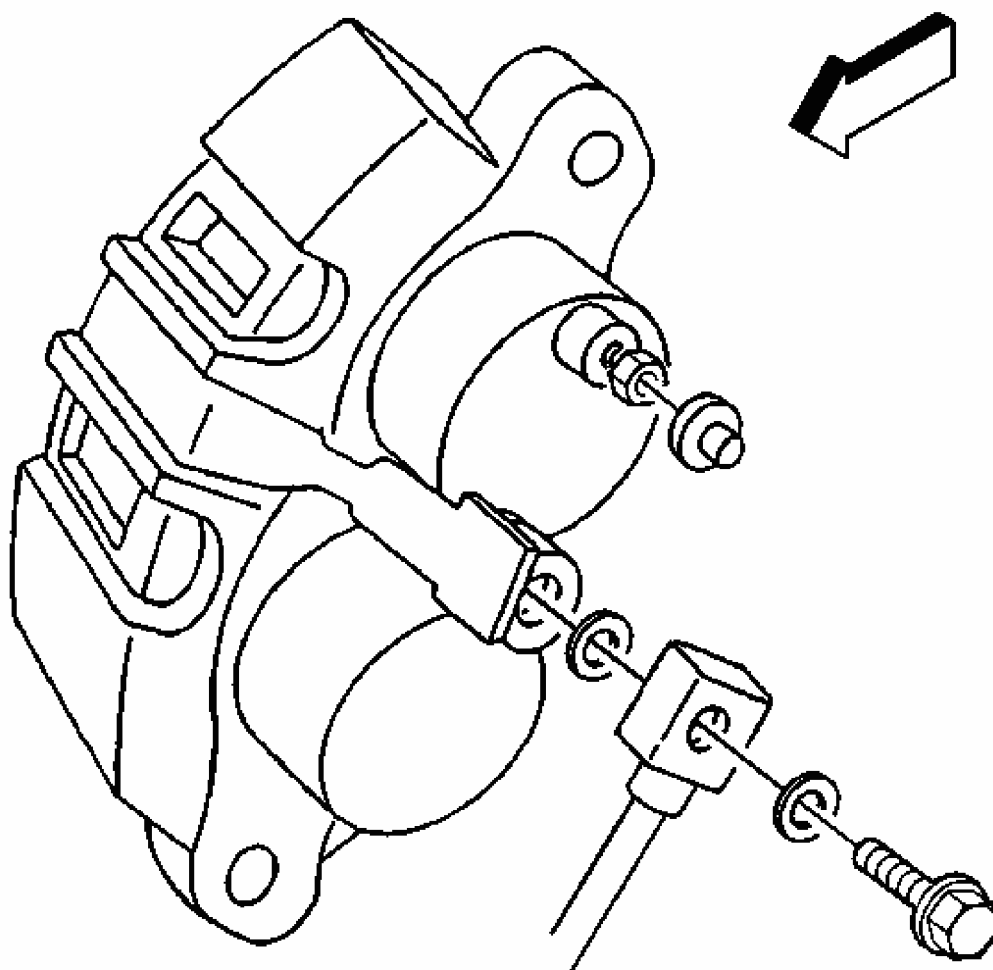


Fig. 26: View Of Banjo Fitting To Caliper
Courtesy of GENERAL MOTORS CORP.

3. Remove the brake caliper hose bolt from the brake caliper.
4. Remove the 2 copper gaskets from the brake caliper bolt. These gaskets may be stuck to the brake caliper and/or the brake hose end.

5. Discard the 2 copper gaskets.
6. Plug the opening in the front brake hose in order to prevent excessive brake fluid loss and contamination.
7. Remove the brake hose and washers from the brake caliper.

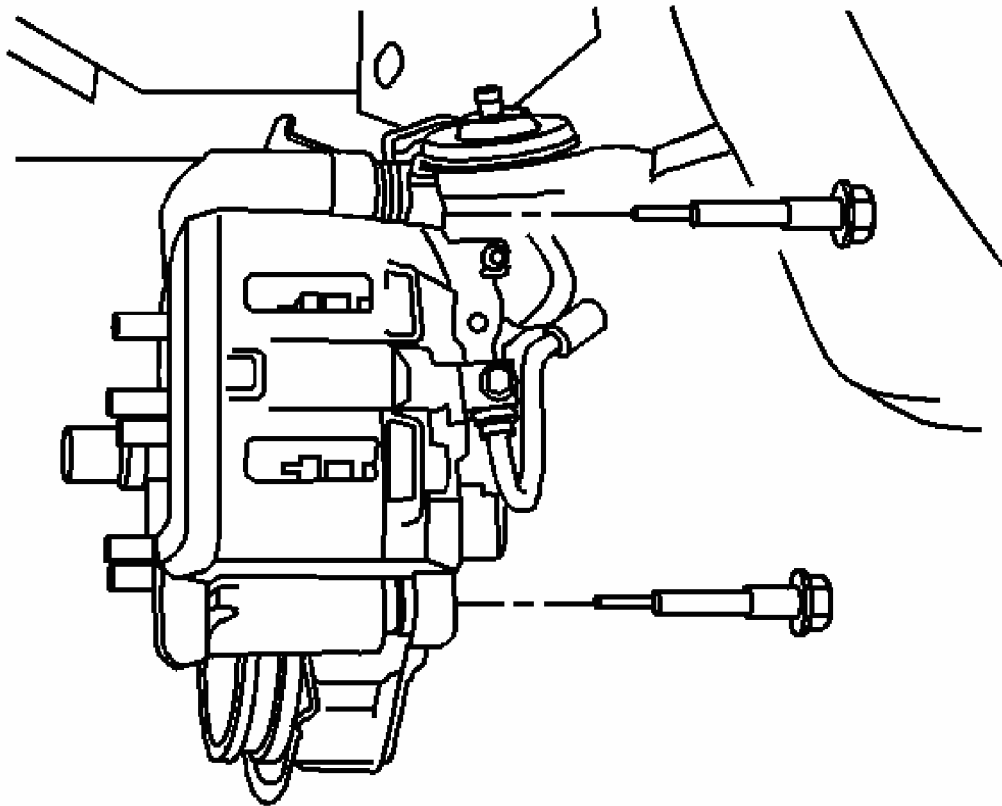


Fig. 27: View Of Brake Caliper Guide Pin Bolts
Courtesy of GENERAL MOTORS CORP.

8. Remove the brake caliper guide pin bolts.

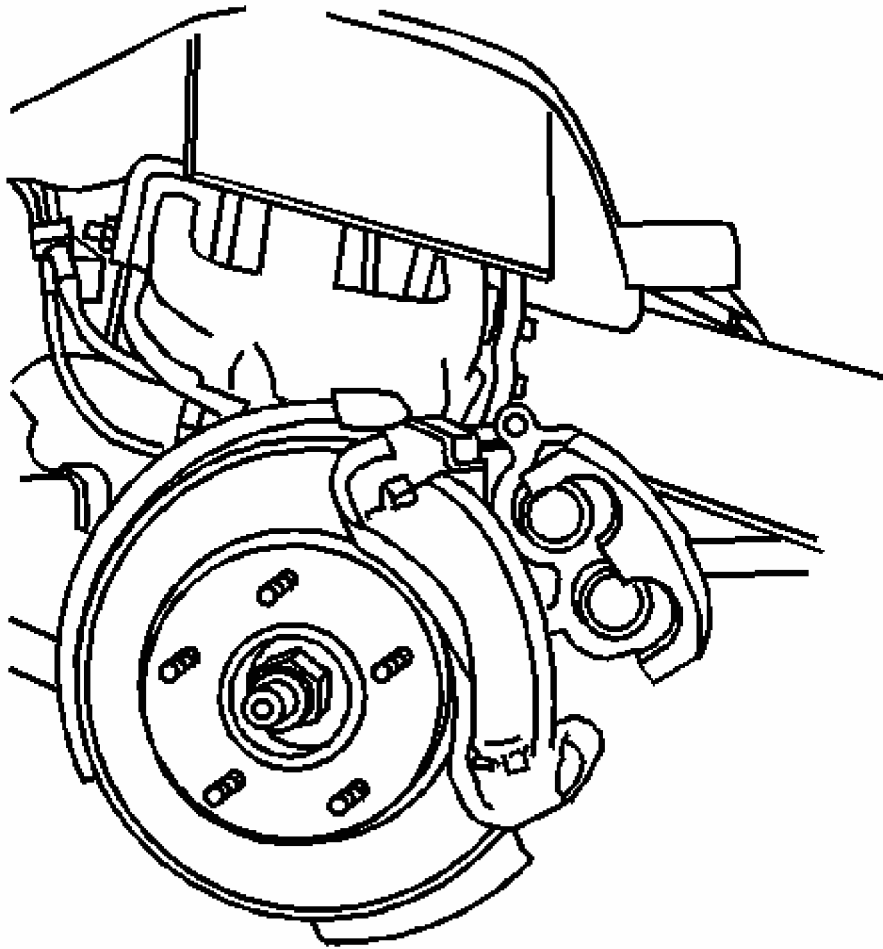


Fig. 28: View Of Brake Caliper Assembly
Courtesy of GENERAL MOTORS CORP.

9. Remove the brake caliper assembly.

Installation Procedure

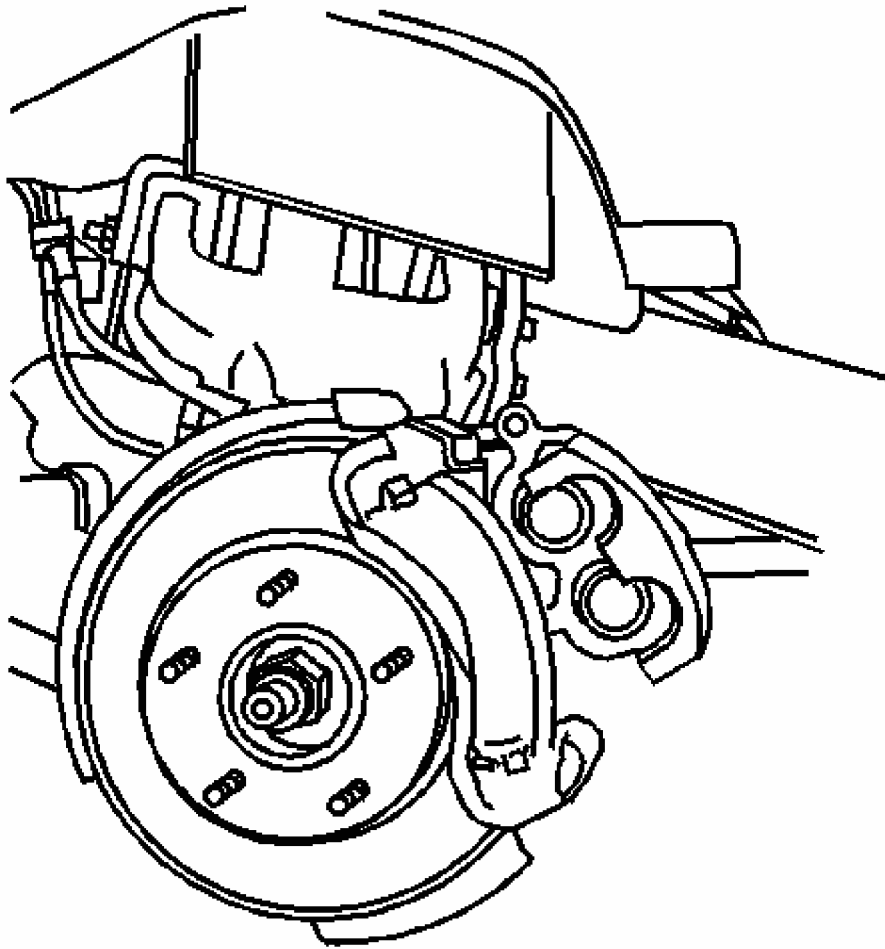


Fig. 29: View Of Brake Caliper Assembly
Courtesy of GENERAL MOTORS CORP.

1. Install the brake caliper on the mounting bracket.

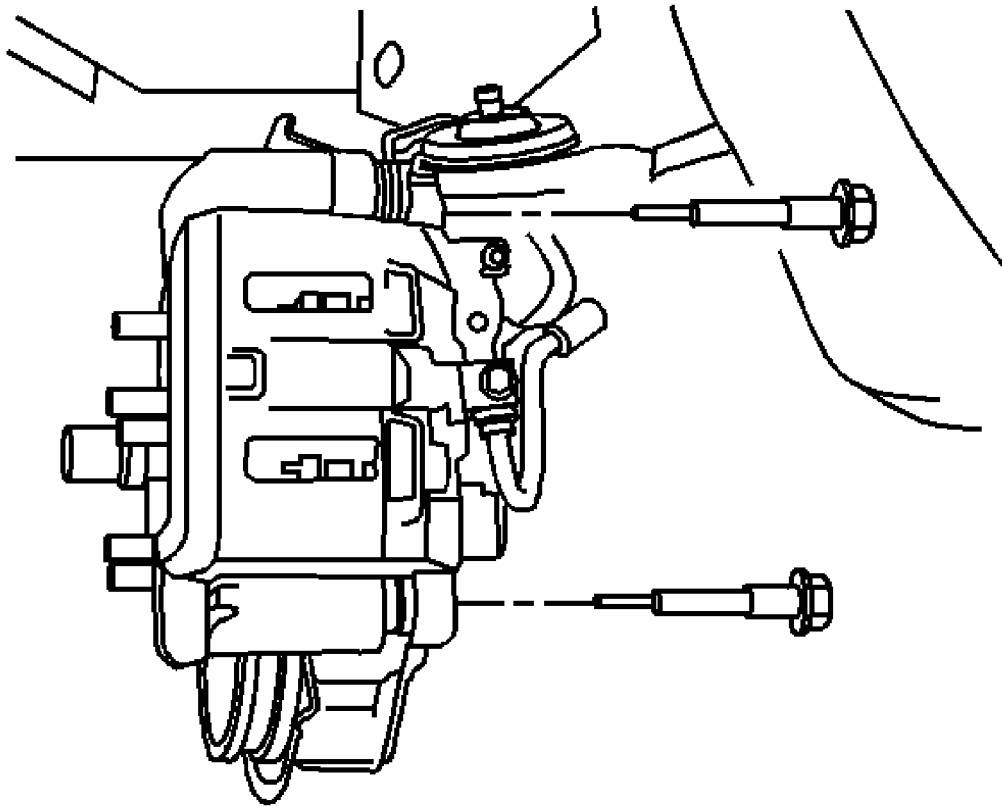


Fig. 30: View Of Brake Caliper Guide Pin Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the brake caliper bolts to the mounting bracket.

Tighten: Tighten the brake caliper bolts to 51 N.m (38 lb ft).

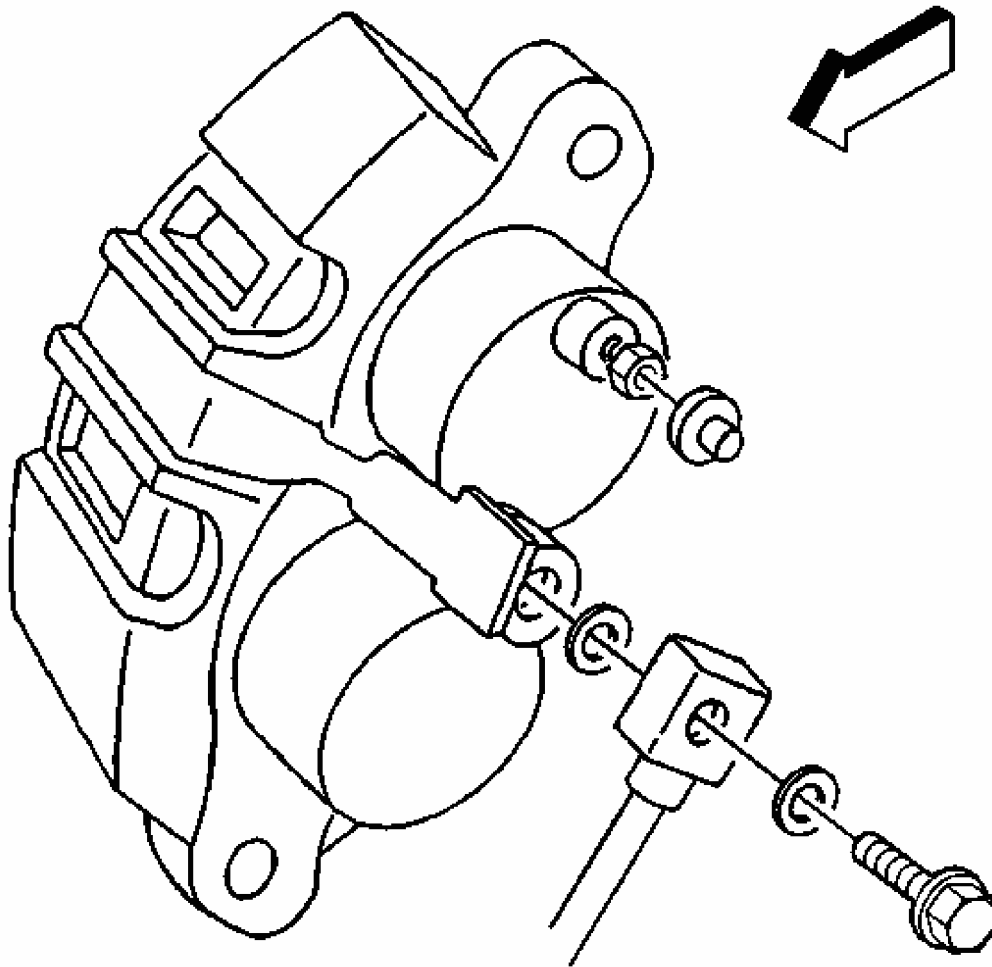


Fig. 31: View Of Banjo Fitting To Caliper
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Installing Hoses without Twists or Bends Notice in Cautions and Notices.

IMPORTANT: When performing the following service procedure, **DO NOT** reuse the old bolt washers. Always use new washers.

3. Install the brake hose bolt and washers.

Tighten: Tighten the brake hose bolt to 54 N.m (40 lb ft).

4. Fill the brake master cylinder to the proper level. Refer to Master Cylinder Reservoir

2004 Chevrolet S10 Pickup

2004 BRAKES Disc Brakes - Blazer/S10, Jimmy/Sonoma

Filling in Hydraulic Brakes.

5. Bleed the brake calipers. Refer to **Hydraulic Brake System Bleeding (Manual)** **Hydraulic Brake System Bleeding (Pressure)** in Hydraulic Brakes.
6. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.
7. Lower the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.

BRAKE CALIPER REPLACEMENT - REAR

Removal Procedure

CAUTION: Refer to **Brake Dust Caution** in Cautions and Notices.

CAUTION: Refer to **Brake Fluid Irritant Caution** in Cautions and Notices.

1. Raise the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
2. Remove the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.

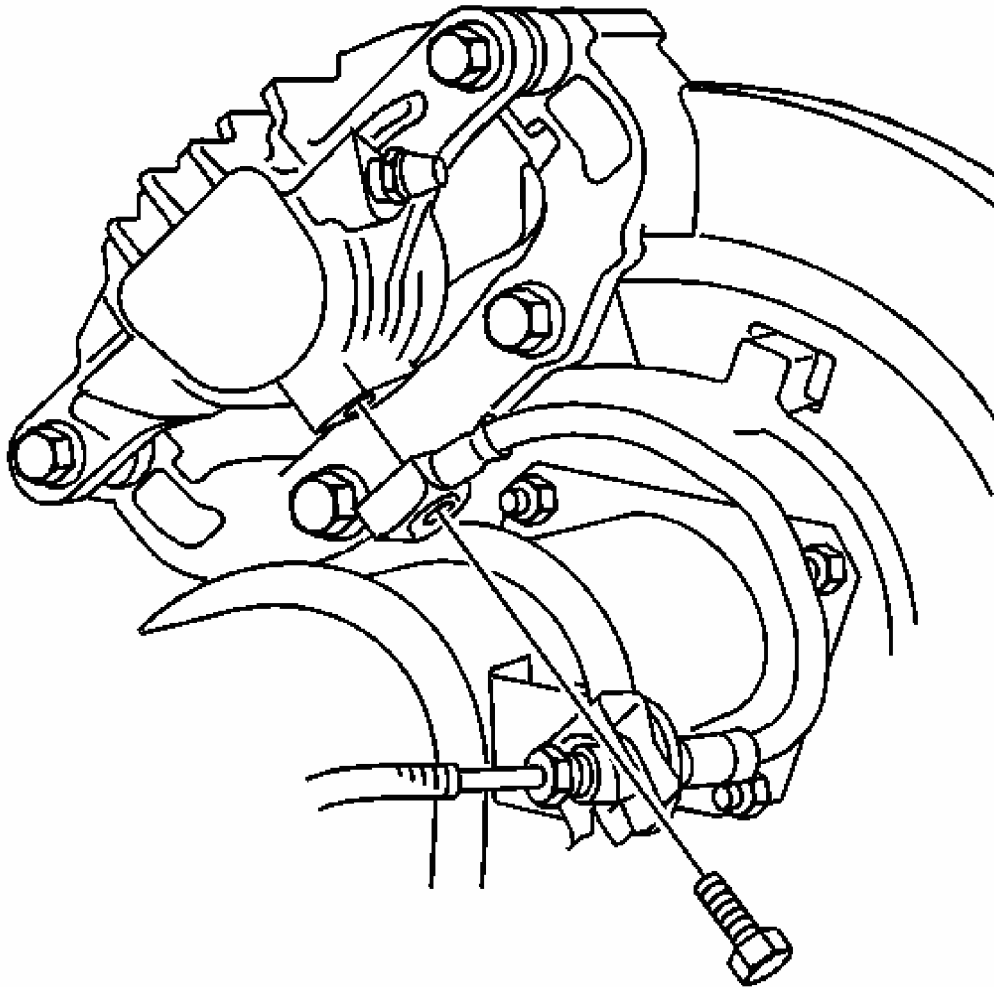


Fig. 32: Locating Brake Hose To Brake Caliper Bolt
Courtesy of GENERAL MOTORS CORP.

3. Remove the brake hose to brake caliper bolt.

IMPORTANT: The gaskets may be stuck to the brake caliper and/or the brake hose end.

4. Discard the metal gaskets.
5. Plug the opening in the front brake hose with a rubber plug in order to prevent brake fluid loss and contamination.

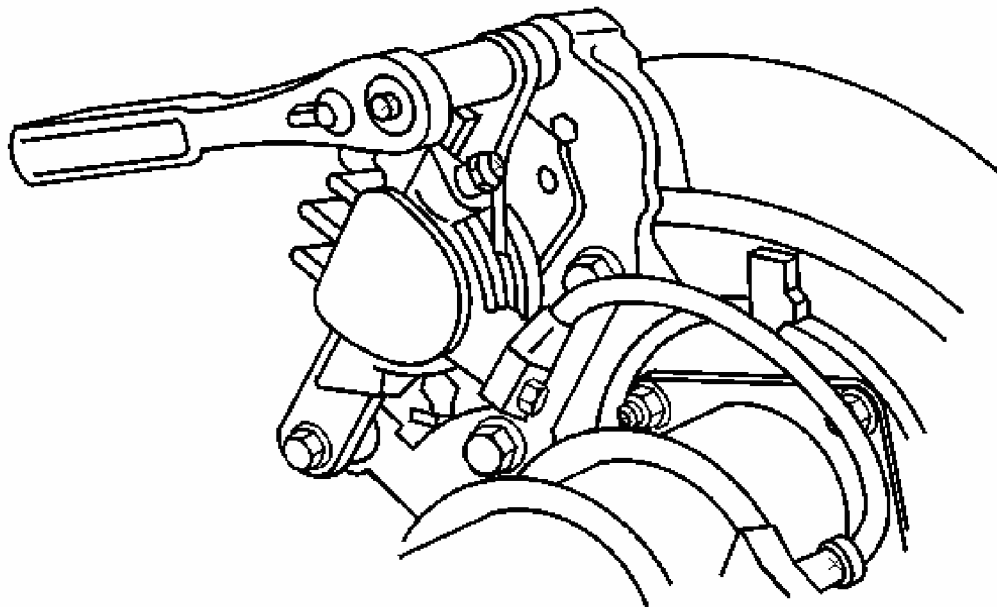


Fig. 33: View Of Upper Brake Caliper Mounting Bolt
Courtesy of GENERAL MOTORS CORP.

6. Remove the caliper guide pin bolts.

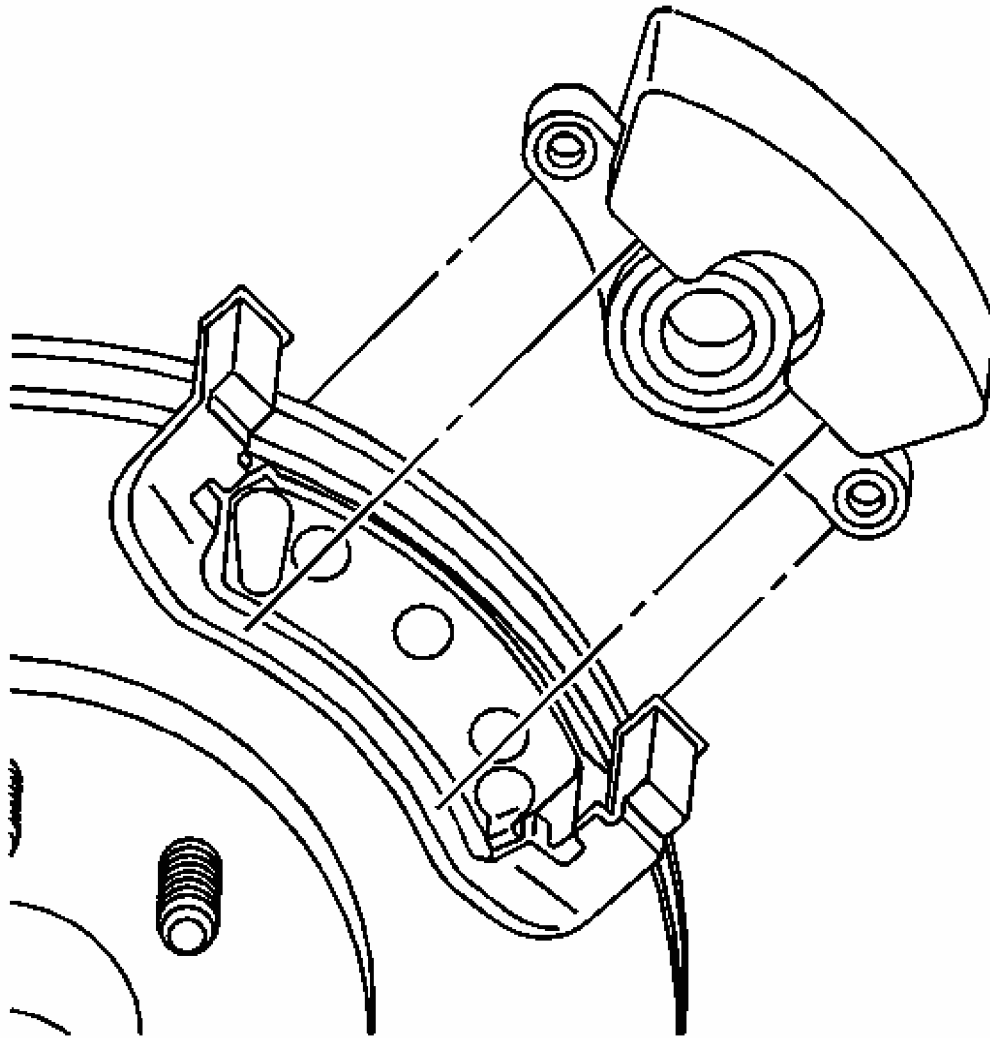


Fig. 34: View Of Brake Caliper Assembly
Courtesy of GENERAL MOTORS CORP.

7. Remove the caliper from the caliper anchor bracket.

Installation Procedure

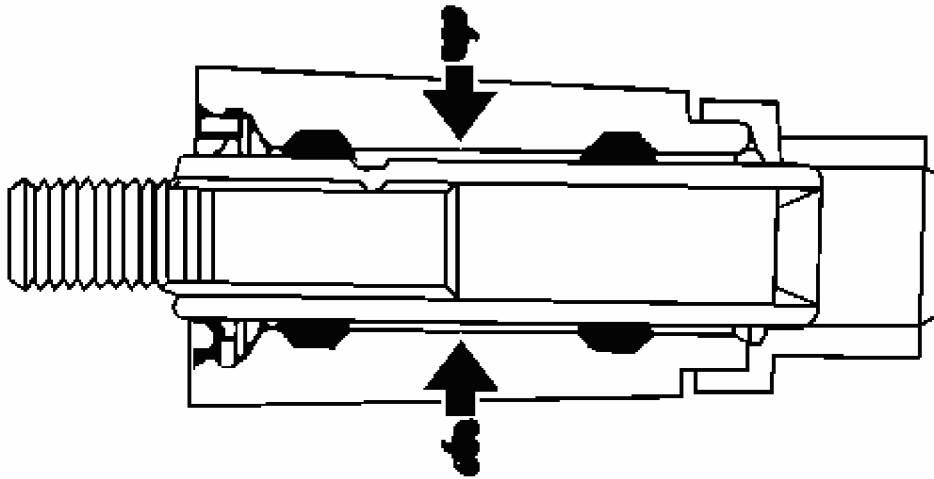


Fig. 35: View Of Brake Caliper Guide Pin
Courtesy of GENERAL MOTORS CORP.

1. If reusing the brake caliper pin bolts and retainers, clean the brake caliper pin bolts and retainers using denatured alcohol.
2. Dry the brake caliper pin bolts using non- lubricated, compressed filtered air.
3. Apply high temperature silicone brake lubricant to the brake caliper bolts.
4. DO NOT apply the lubricant to the brake pad hardware.

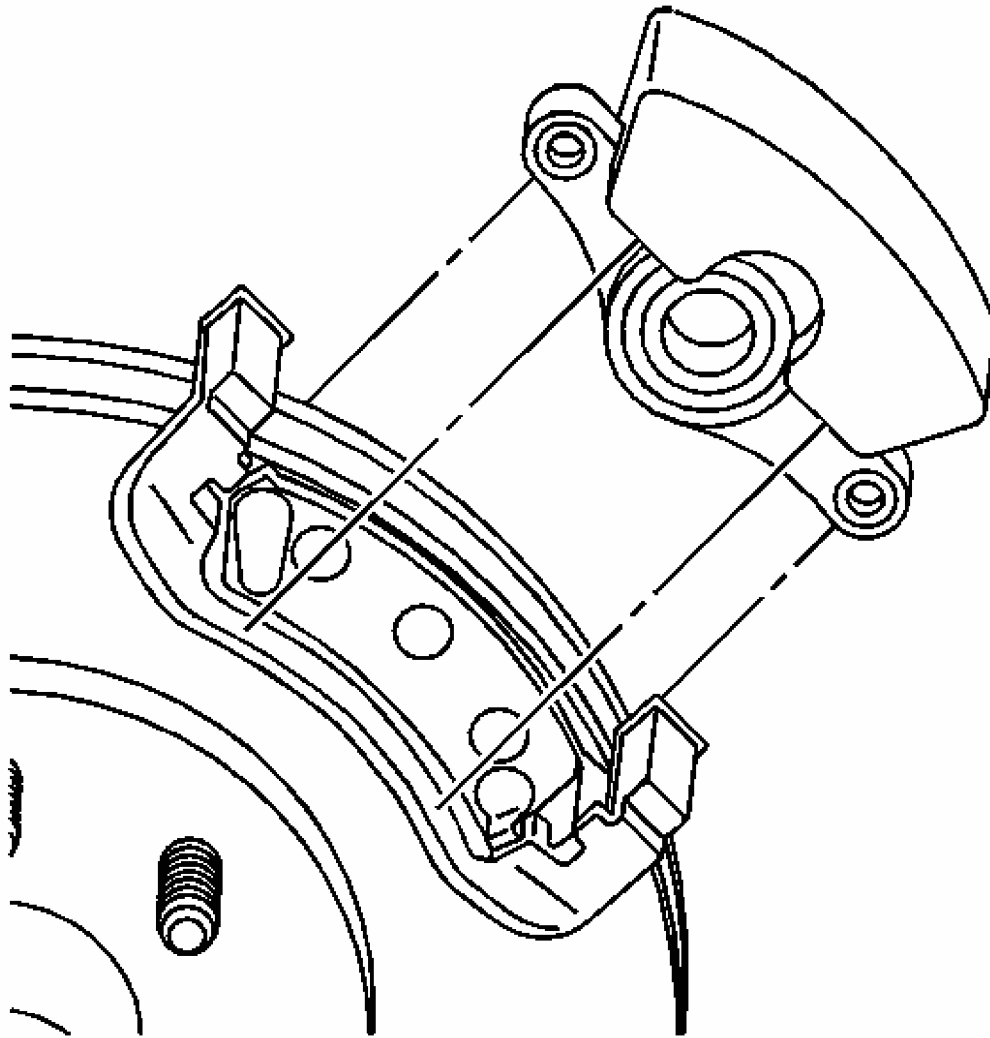


Fig. 36: View Of Brake Caliper Assembly
Courtesy of GENERAL MOTORS CORP.

5. Install the brake caliper on the mounting bracket.

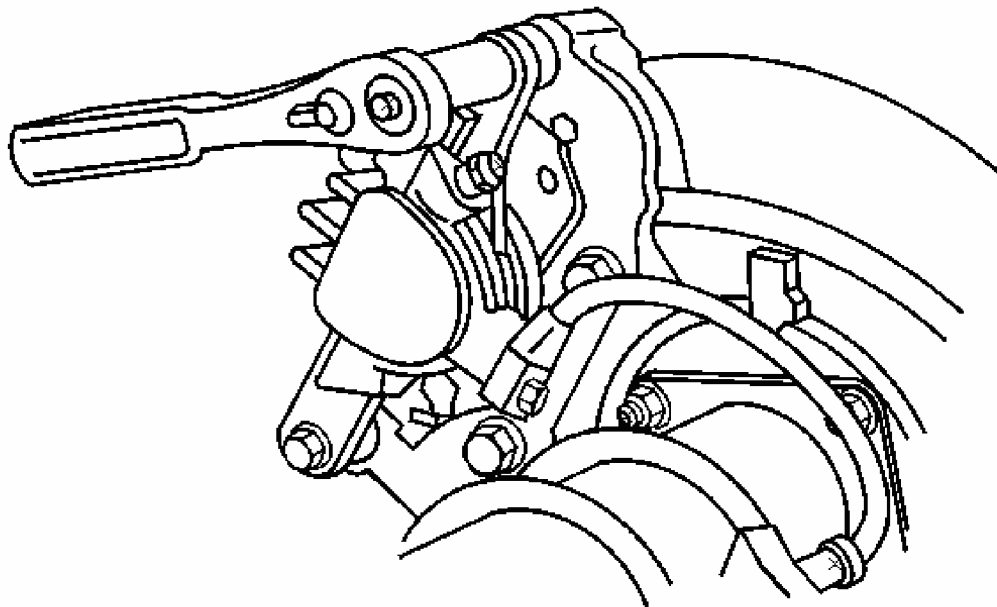


Fig. 37: View Of Upper Brake Caliper Mounting Bolt
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

6. Install the brake caliper bolts.

Tighten: Tighten the brake caliper bolts to 31 N.m (23 lb ft).

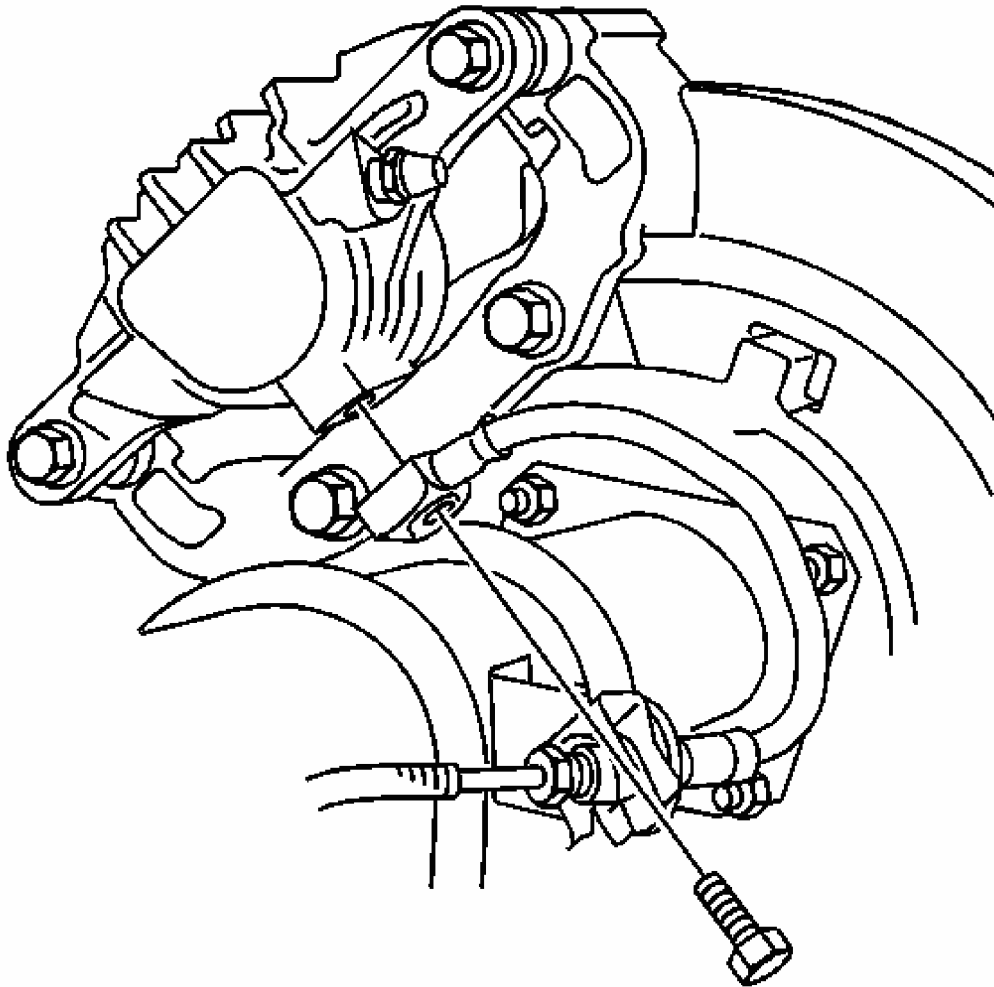


Fig. 38: Locating Brake Hose To Brake Caliper Bolt
Courtesy of GENERAL MOTORS CORP.

7. Install the NEW metal (copper) gaskets to the brake hose and the bolt.

NOTE: Refer to Brake Hose Installation Notice in Cautions and Notices.

8. Install the rear brake hose bolt.

Tighten: Tighten the brake hose bolt to 44 N.m (33 lb ft).

9. Bleed the hydraulic brake system. Refer to **Hydraulic Brake System Bleeding (Manual)** or **Hydraulic Brake System Bleeding (Pressure)** in Hydraulic Brakes.

10. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.
11. Lower the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.

BRAKE CALIPER OVERHAUL - FRONT (SINGLE PISTON)

Tools Required

J 26267 Piston Seal Installer. See **Special Tools and Equipment**.

Disassembly Procedure

CAUTION: Refer to **Brake Dust Caution** in Cautions and Notices.

CAUTION: Refer to **Brake Fluid Irritant Caution** in Cautions and Notices.

1. Drain all of the brake fluid from the caliper.
2. Install a piece of wood or shop towels between the caliper and the piston.

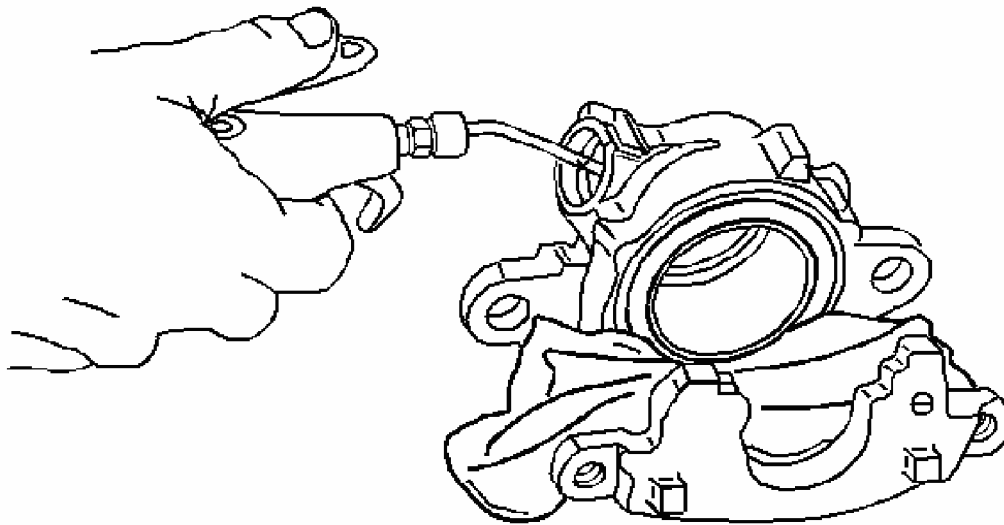


Fig. 39: Removing Piston
Courtesy of GENERAL MOTORS CORP.

3. Cover the brake caliper with a shop rag.

CAUTION: Refer to Eye Protection Caution in Cautions and Notices.

CAUTION: Refer to Safety Glasses and Compressed Air Caution in Cautions and Notices.

4. Apply only enough compressed air to the brake caliper to remove the piston.
5. Remove the shop rag cover from the brake caliper.
6. Remove the piece of wood or shop towels from the brake caliper.

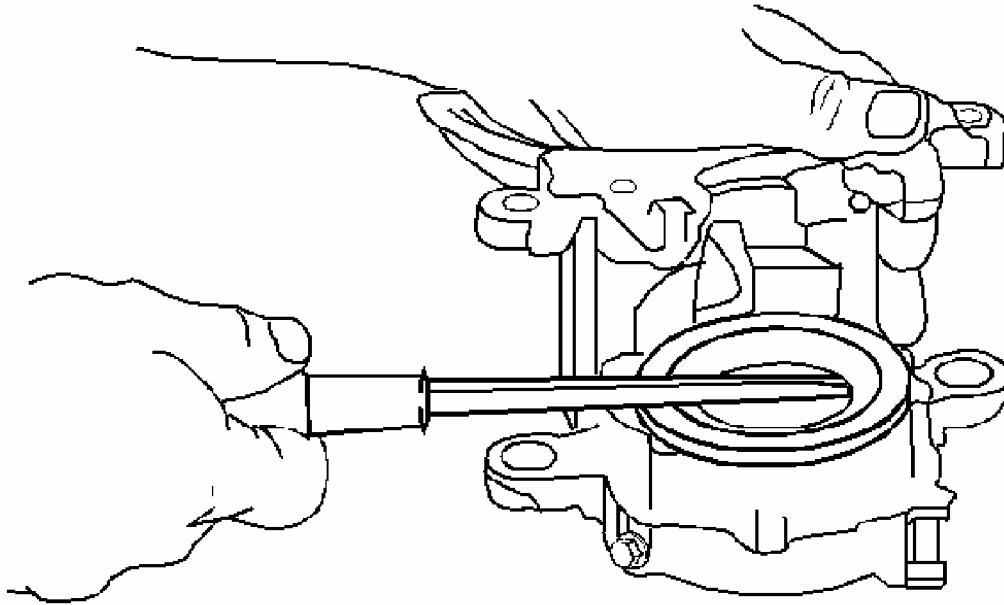


Fig. 40: Removing Boot From Front Brake Caliper
Courtesy of GENERAL MOTORS CORP.

7. Remove the boot from the front brake caliper.

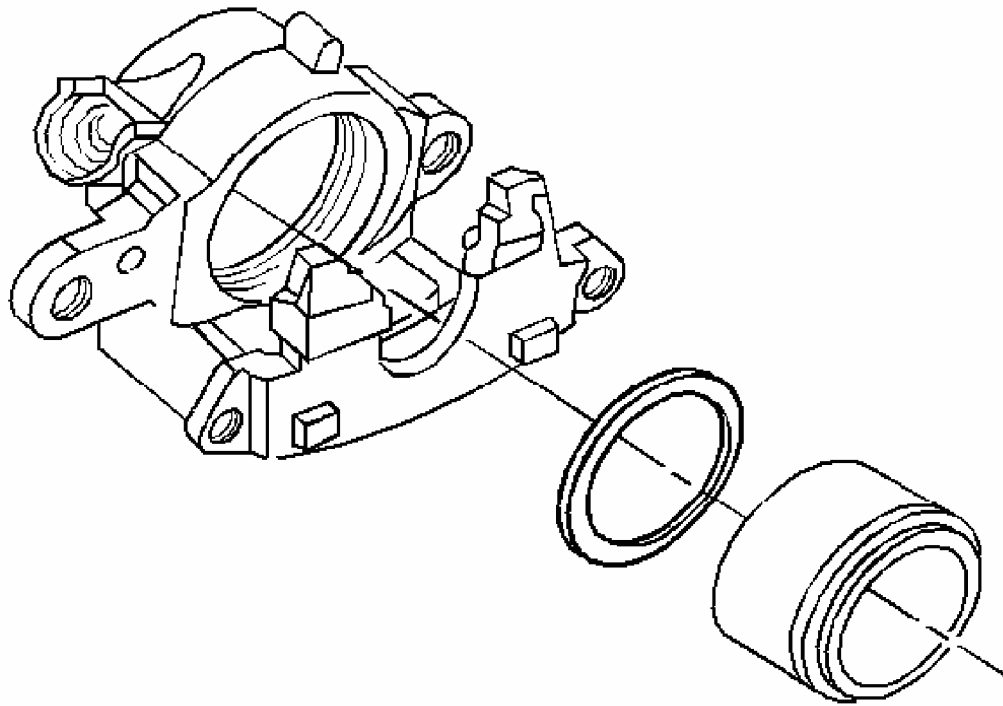


Fig. 41: Exploded View Of Brake caliper Piston
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: When removing the front brake caliper piston seal, use a non metallic tool.

8. Remove the front brake caliper piston seal.

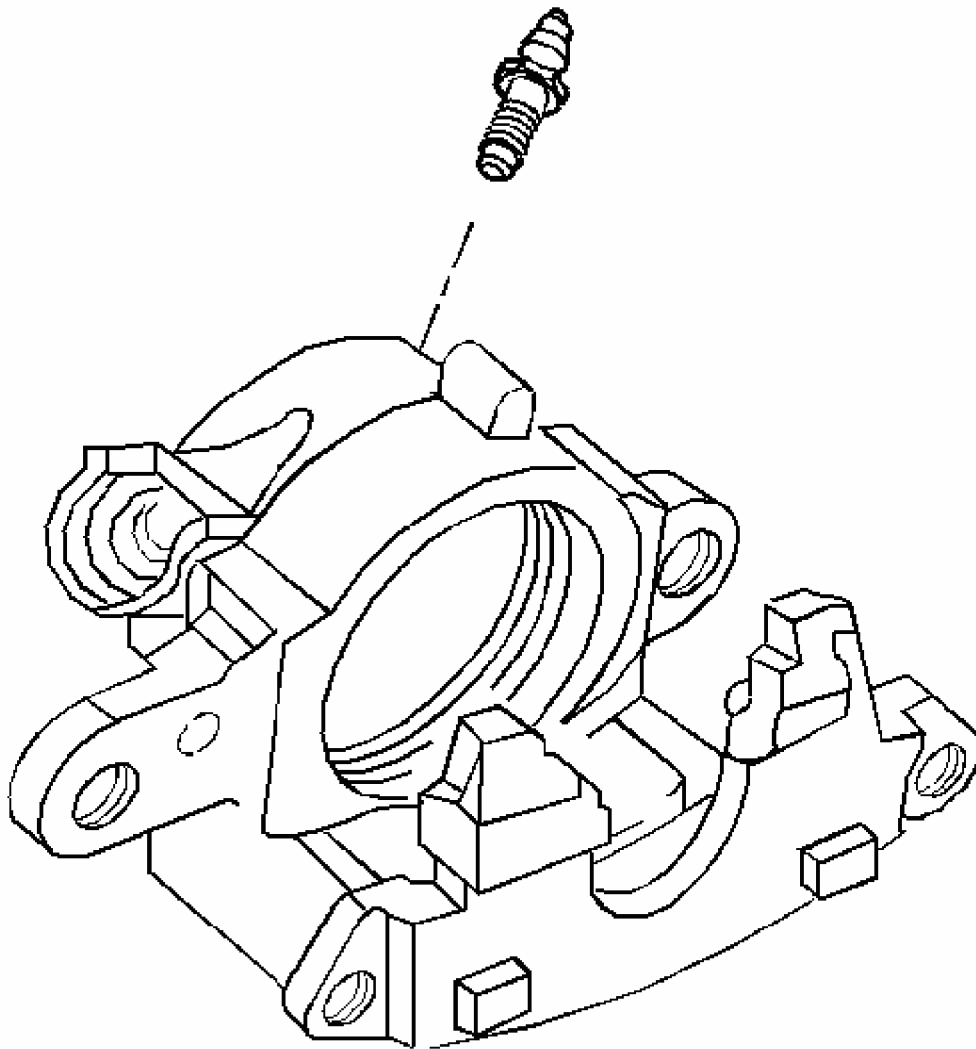


Fig. 42: View Of Bleeder Valve
Courtesy of GENERAL MOTORS CORP.

9. Remove the bleeder valve from the brake caliper body.
10. Clean the following items with denatured alcohol.
 - The bleeder valve
 - The brake caliper body bore
 - The brake caliper piston

IMPORTANT: If the corrosion cannot be removed, replace the brake

caliper housing and piston.

11. Using a crocus cloth, clean the corrosion from the brake caliper bore.
12. Dry the parts using non lubricated, filtered compressed air.
13. Replace the brake caliper or the piston if any of the following conditions exist:
 - Scoring on the piston surface or in the caliper bore
 - Corrosion on the piston
 - Chrome plating damage on the piston
 - Pitting in the caliper bore

Assembly Procedure

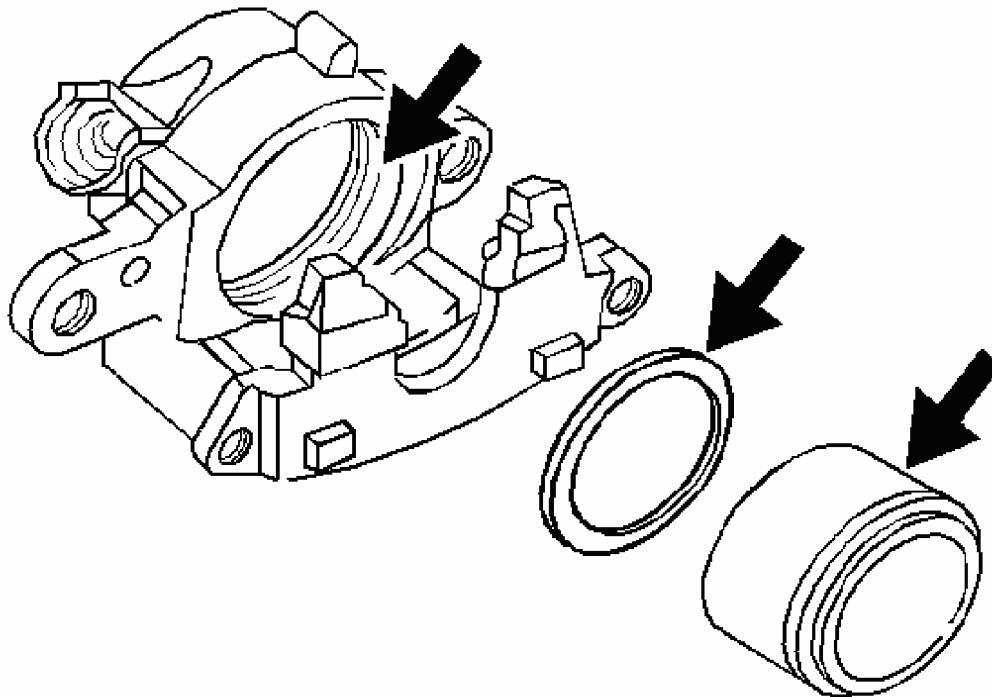


Fig. 43: Exploded View Of Brake Caliper Piston
Courtesy of GENERAL MOTORS CORP.

1. Lubricate the following parts with clean brake fluid.
 - The piston
 - The piston seal
 - The brake caliper bore

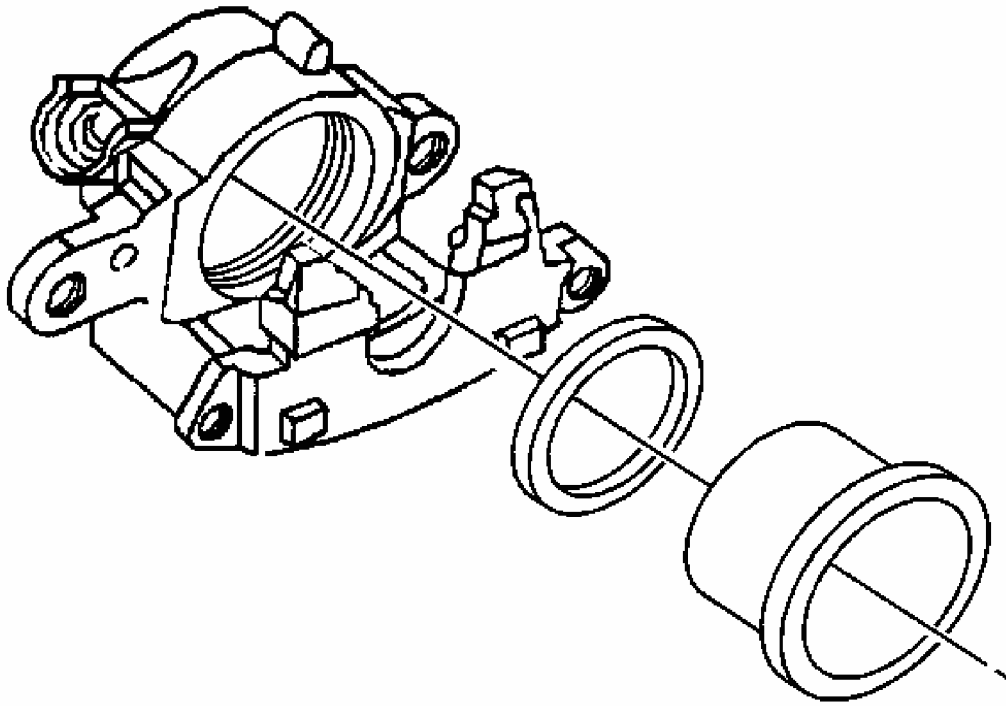


Fig. 44: Exploded View Of Brake Caliper Piston
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Ensure that the piston seal is not twisted in the brake caliper bore groove.

2. Install the piston seal.

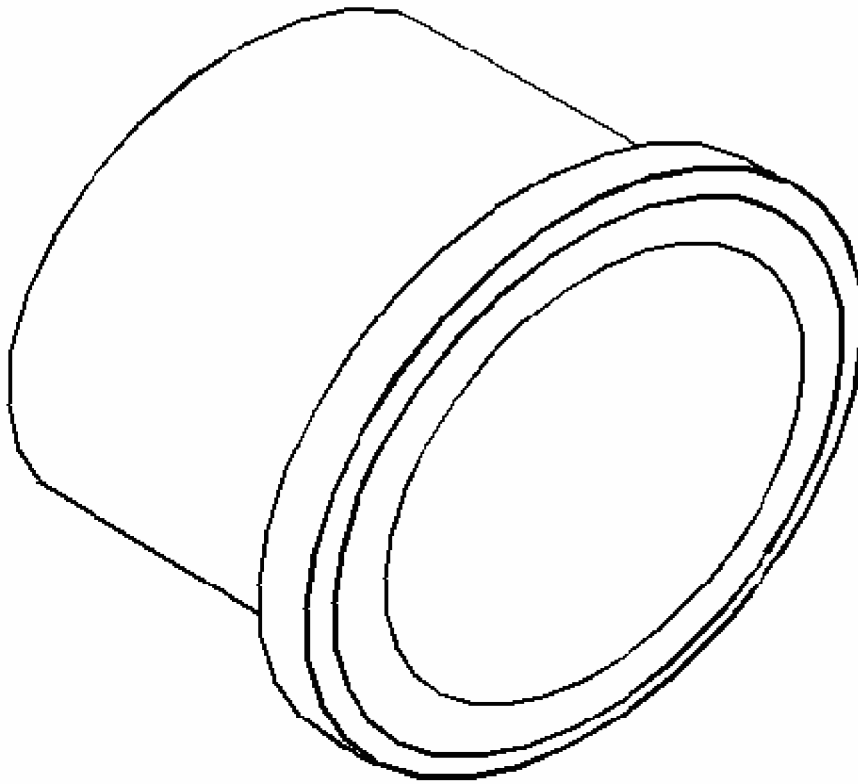


Fig. 45: View Of Boot

Courtesy of GENERAL MOTORS CORP.

3. Install the boot on the piston.

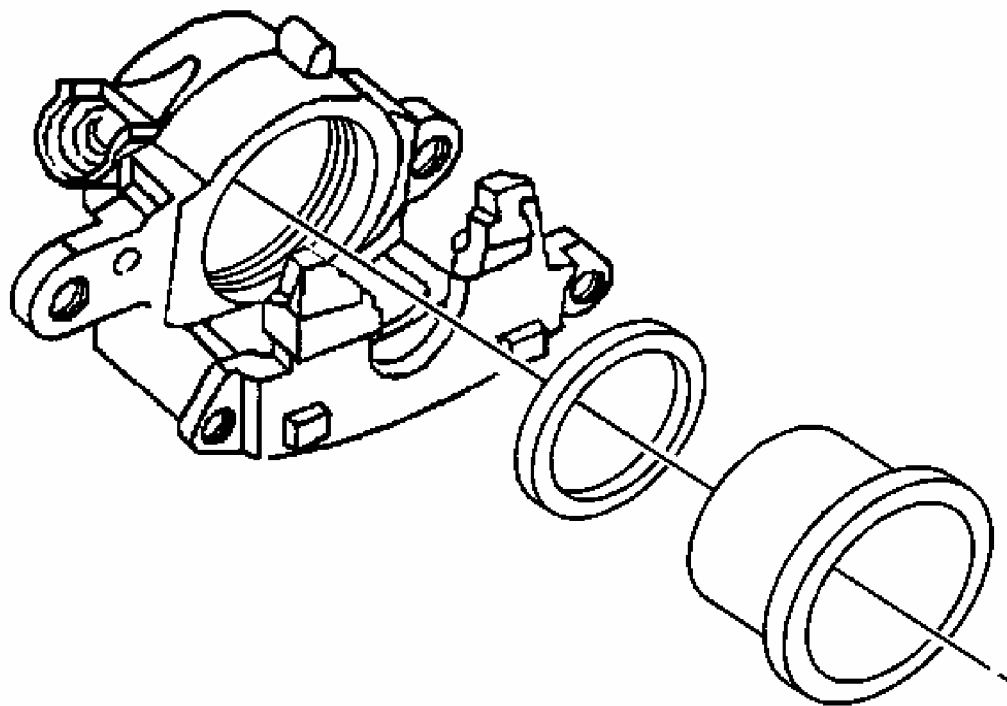


Fig. 46: Exploded View Of Brake Caliper Piston
Courtesy of GENERAL MOTORS CORP.

4. Install the piston in the caliper bore.

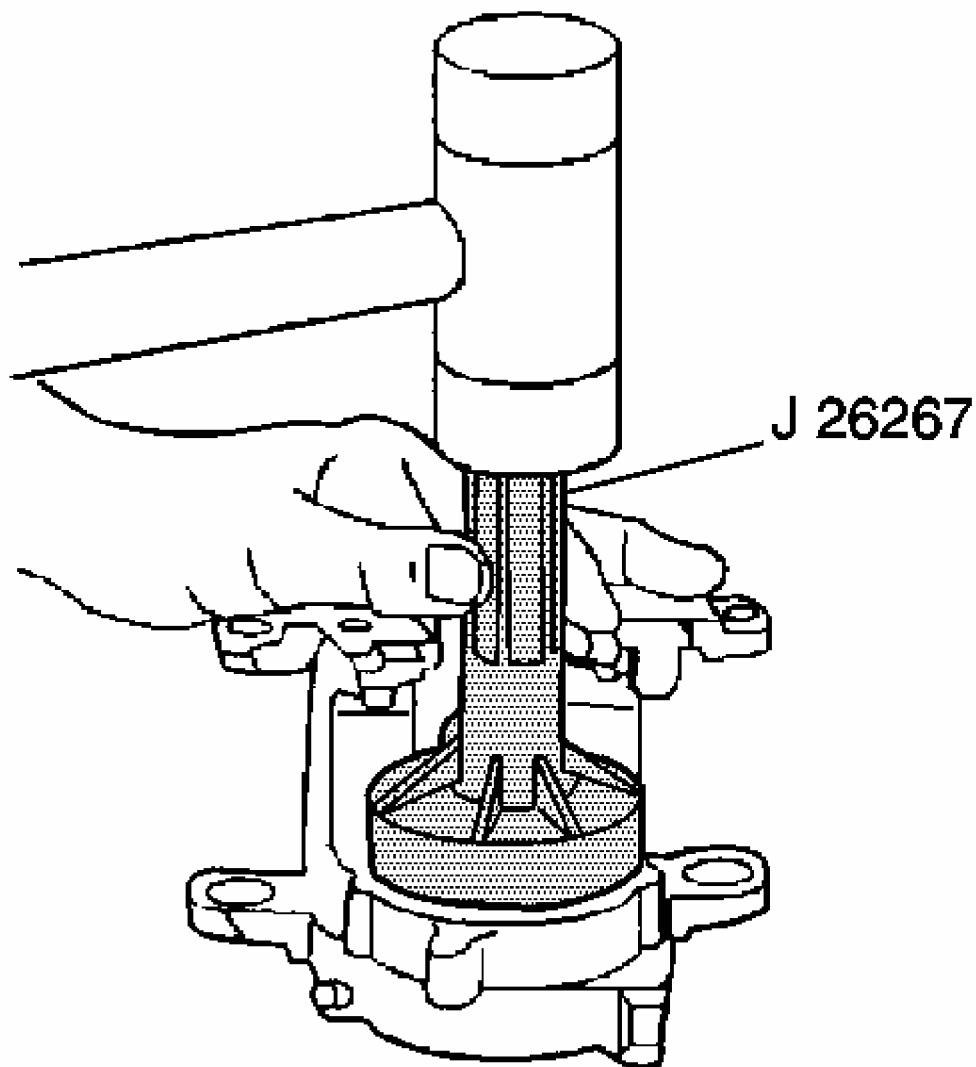


Fig. 47: Installing Front Caliper Piston Boot
Courtesy of GENERAL MOTORS CORP.

5. Using **J 26267** , install the front caliper piston boot.

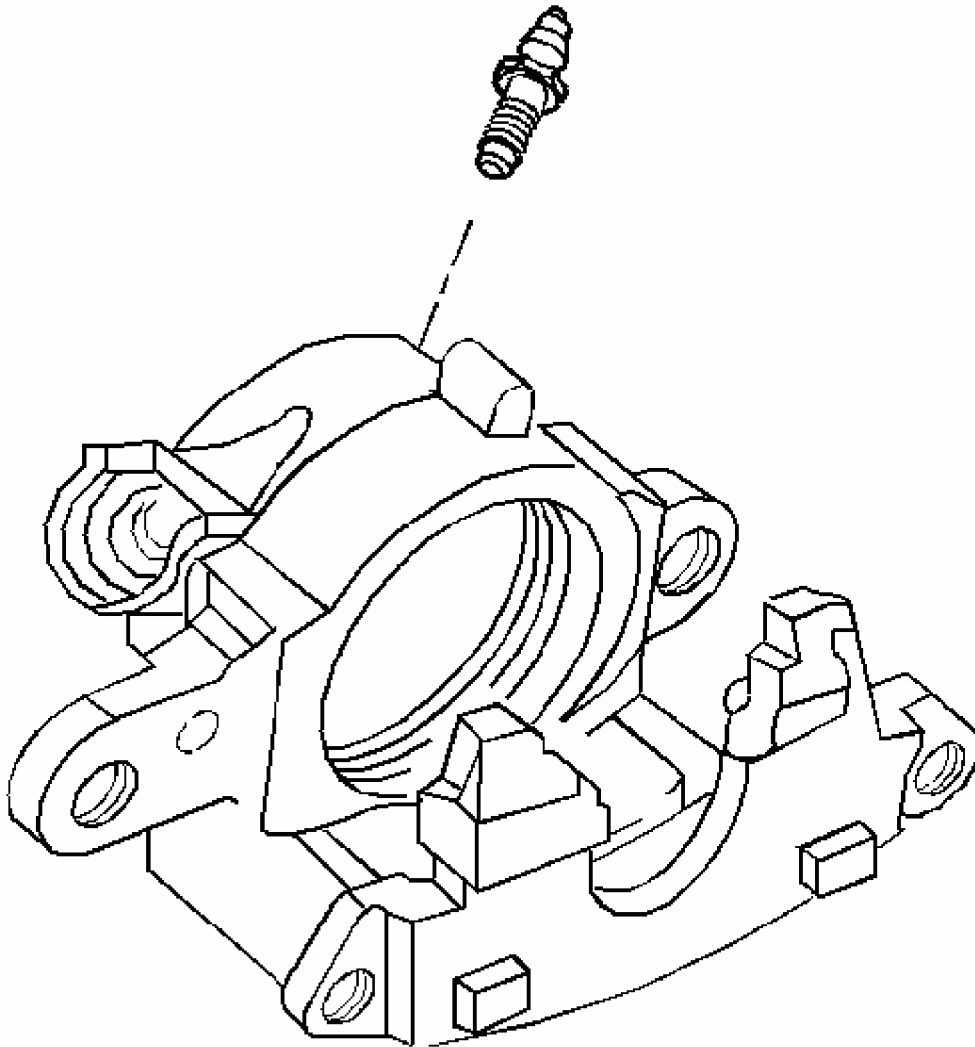


Fig. 48: View Of Bleeder Valve
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

6. Install the bleeder valve.

Tighten: Tighten the bleeder valve to 12 N.m (110 lb in).

BRAKE CALIPER OVERHAUL - FRONT (DUAL PISTON)

Tools Required

- J 8092 Driver Handle. See Special Tools and Equipment.
- J 43885 Boot Seal Installer

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

CAUTION: Refer to Brake Fluid Irritant Caution in Cautions and Notices.

Disassembly Procedure

1. Drain all the brake fluid from the caliper.
2. Install a piece of wood or shop towels between the piston and the inside of the brake caliper.

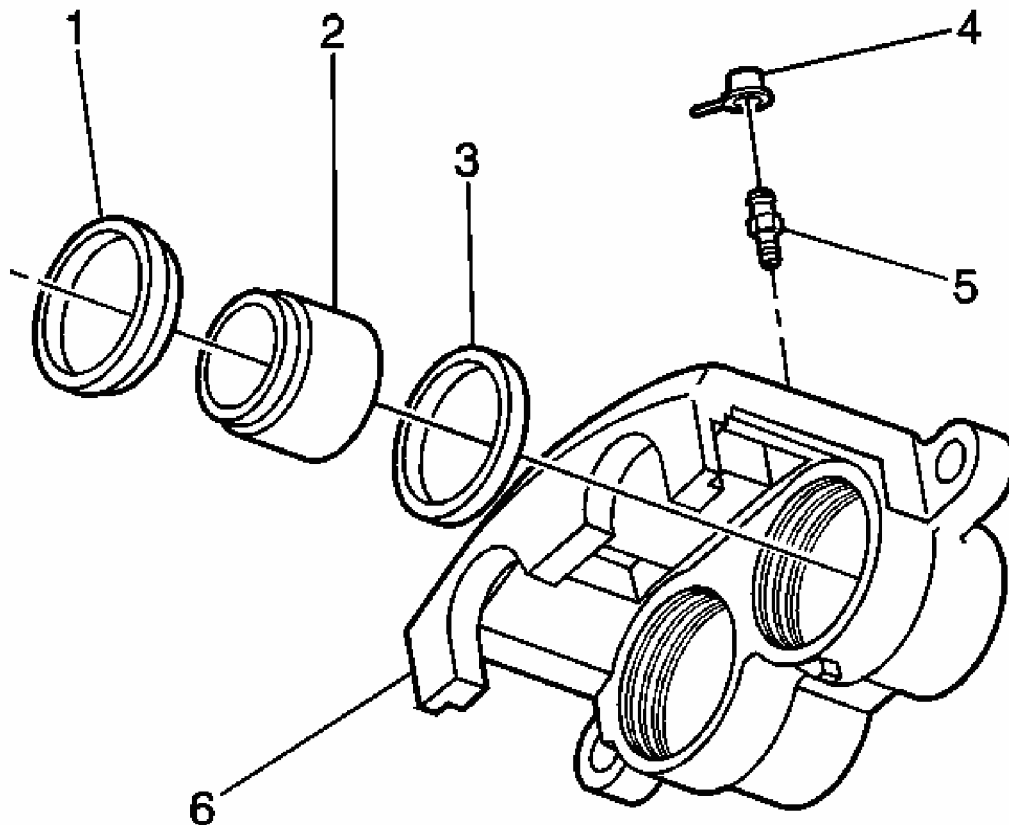


Fig. 49: Locating Caliper Components

Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Eye Protection Caution in Cautions and Notices.

CAUTION: Refer to Safety Glasses and Compressed Air Caution in Cautions and Notices.

3. Remove the pistons (2) from the caliper bores.
4. Remove the boots (1) from the caliper bores. Do not scratch the caliper bores.
5. Remove the piston seals (3) from the caliper bores. Do not use a metal tool.
6. Remove the bleeder valve cap (4).
7. Remove the bleeder valve (5) from the caliper housing (6).
8. Clean the bleeder valve, the caliper bores, the caliper passages and the pistons with denatured alcohol. Dry the parts and blow out the brake fluid passages. Use dry and filtered compressed air.
9. Replace the pistons or the caliper if any of the following conditions exist:
 - Scoring on the piston surface or in the caliper bore
 - Corrosion on the piston
 - Chrome plating damage on the piston
 - Corrosion in the caliper bore

Use a crocus cloth in order to polish light corrosion from the caliper bore. Replace the caliper if the corrosion cannot be removed.

- Pitting in the caliper bore

Assembly Procedure

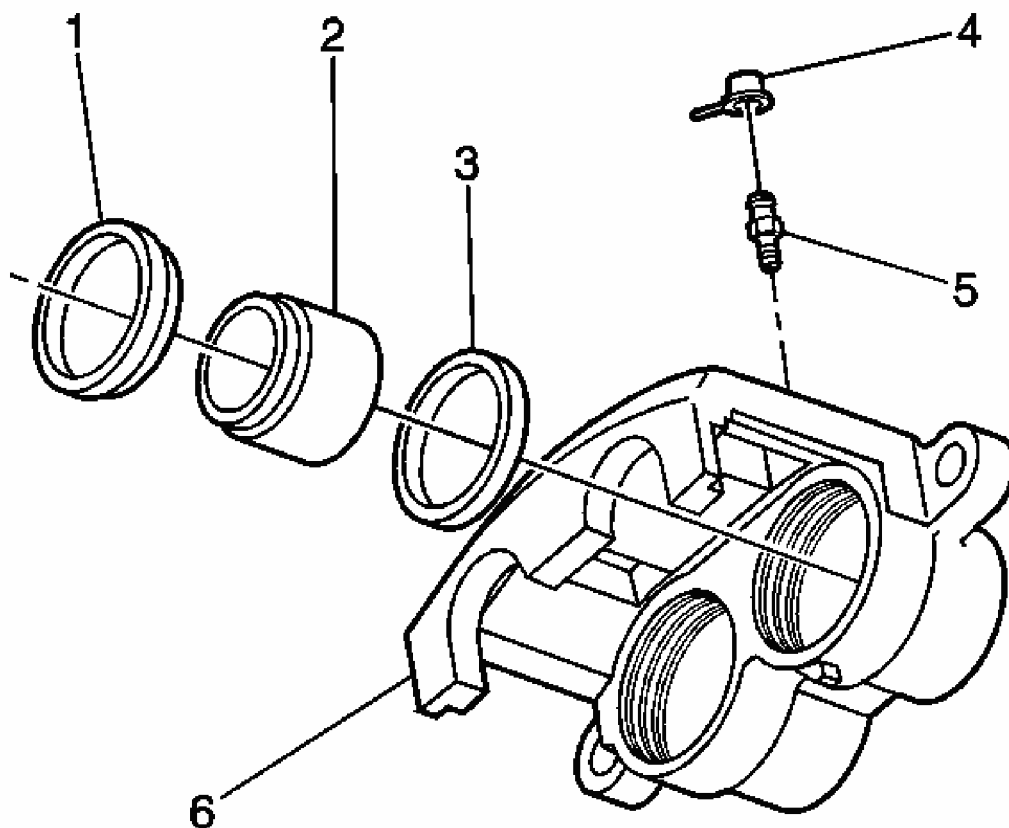


Fig. 50: Locating Caliper Components
Courtesy of GENERAL MOTORS CORP.

1. Lubricate the new piston seals (3), the caliper bores, and the pistons (2) using clean brake fluid.
2. Install the piston seals (3). Ensure that the piston seals are not twisted in the caliper bore grooves.
3. Install the boot seals (1) on the pistons (2).
4. Install the pistons in the caliper bores.

NOTE: Refer to Fastener Notice in Cautions and Notices.

5. Install the bleeder valve (5) in the caliper housing (6).

Tighten: Tighten the bleeder valve to 7 N.m (62 lb in).

6. Install the bleeder valve cap (4).

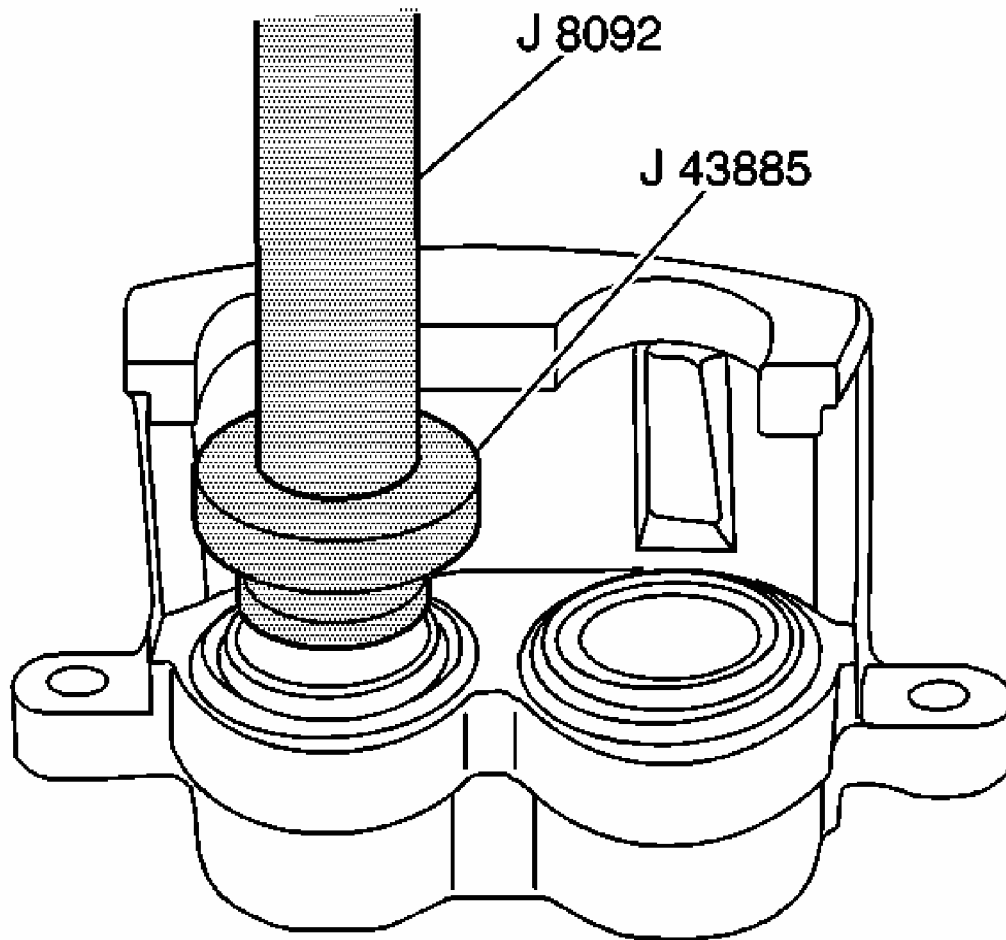


Fig. 51: Installing Boot Seals Into Caliper Housing Bores
Courtesy of GENERAL MOTORS CORP.

7. Install the boot seals into the caliper housing bores using the **J 8092** and the **J 43885**.

BRAKE CALIPER OVERHAUL - REAR

Disassembly Procedure

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

CAUTION: Refer to Brake Fluid Irritant Caution in Cautions and Notices.

1. Drain all the brake fluid from the caliper.
2. Pad the interior of the caliper with clean shop towels.

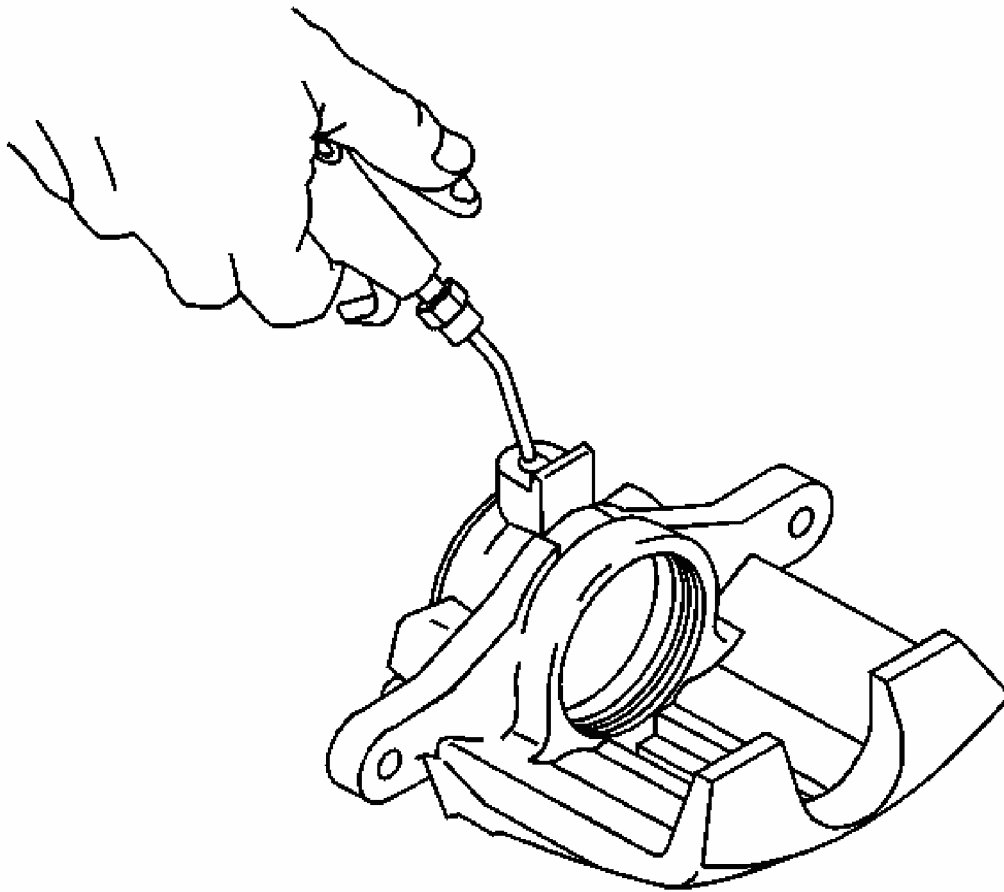


Fig. 52: Removing Piston From Caliper Bore
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Eye Protection Caution in Cautions and Notices.

CAUTION: Refer to Safety Glasses and Compressed Air Caution in Cautions and Notices.

3. Remove the piston from the caliper bore.

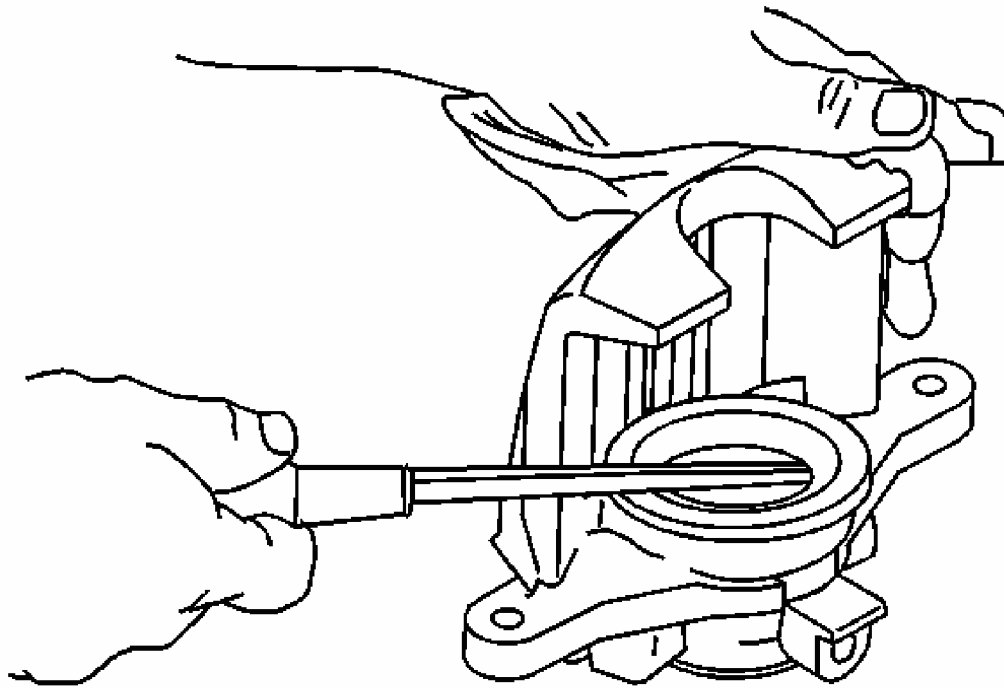


Fig. 53: Removing Boot From Caliper Bore
Courtesy of GENERAL MOTORS CORP.

4. Remove the boot from the caliper bore. Do not scratch the housing bore.

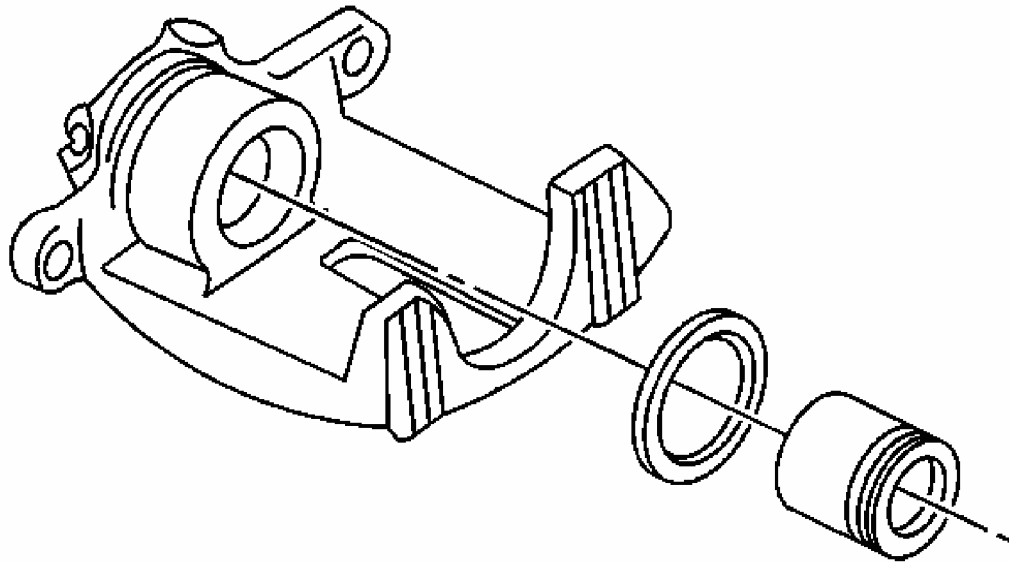


Fig. 54: Locating Piston Seal
Courtesy of GENERAL MOTORS CORP.

5. Remove the piston seal from the caliper bore. Do not use a metal tool.

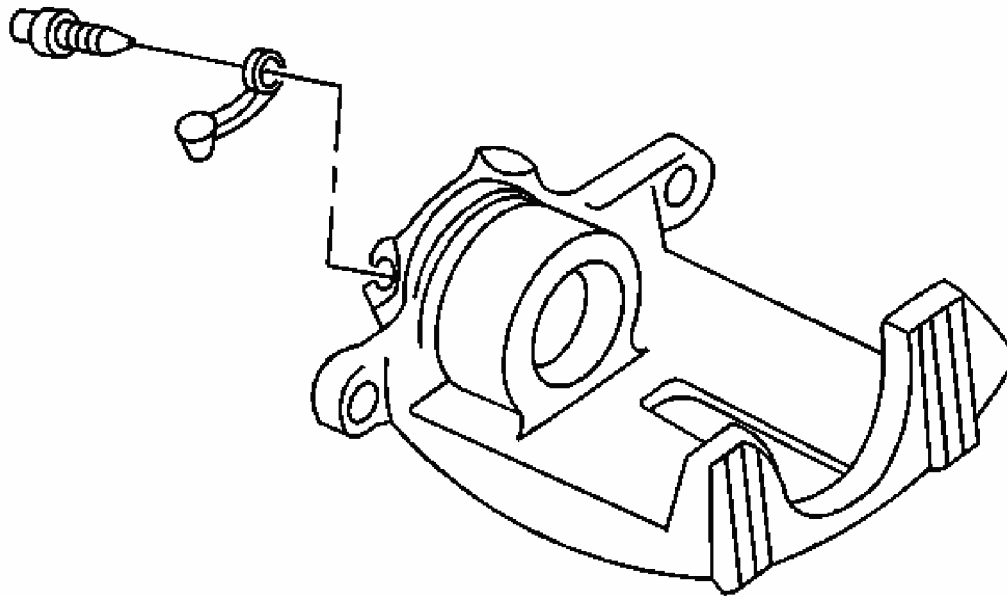


Fig. 55: View Of Bleeder Valve & Bleeder Valve Cap
Courtesy of GENERAL MOTORS CORP.

6. Remove the bleeder valve and bleeder valve cap from the caliper body.
7. Remove the guide pins and guide pin sleeves from the anchor bracket.
8. Clean the following components with denatured alcohol.
 - The bleeder valve
 - The caliper bore
 - The caliper passages
 - The piston
 - The lining contact area on the anchor bracket
9. Dry the parts and blow out the brake fluid passages. Use dry and filtered compressed air.
10. Replace the piston or the caliper if any of the following conditions exist:
 - Scoring on the piston surface or in the caliper bore
 - Corrosion on the piston
 - Chrome plating damage on the piston
 - Corrosion in the caliper bore. Use crocus cloth in order to polish light corrosion from the caliper bore. Replace the caliper if the corrosion cannot be removed.
 - Pitting in the caliper bore

NOTE: Refer to Fastener Notice in Cautions and Notices.

11. Replace the bleeder valve cap.

Tighten: Tighten the bleeder valve to 12 N.m (110 lb in).

Assembly Procedure

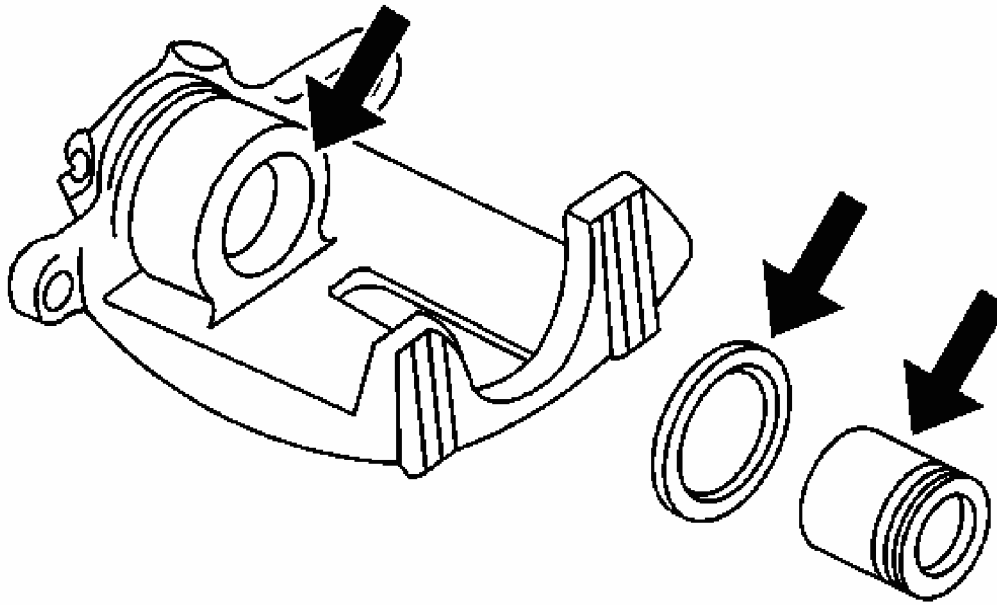


Fig. 56: Locating Caliper Components
Courtesy of GENERAL MOTORS CORP.

1. Lubricate the new piston seal, the caliper bore, and the piston with clean brake fluid.

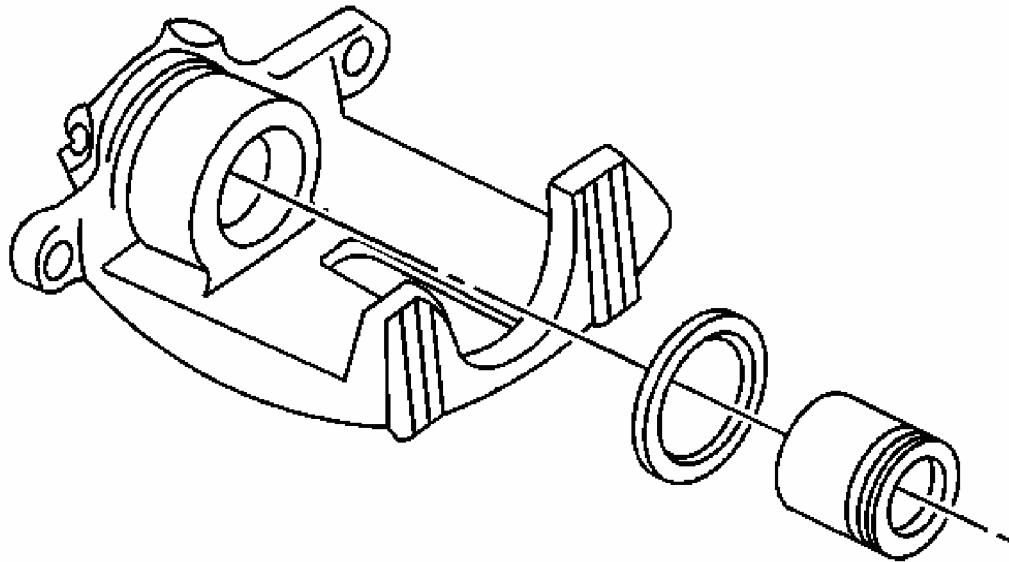


Fig. 57: Locating Piston Seal
Courtesy of GENERAL MOTORS CORP.

2. Install the piston seal. Make sure the piston seal is not twisted in the caliper bore groove.
3. Install the boot into the caliper housing bore by hand.
4. Install the piston in the caliper bore. Push the piston to the bottom of the bore by hand.

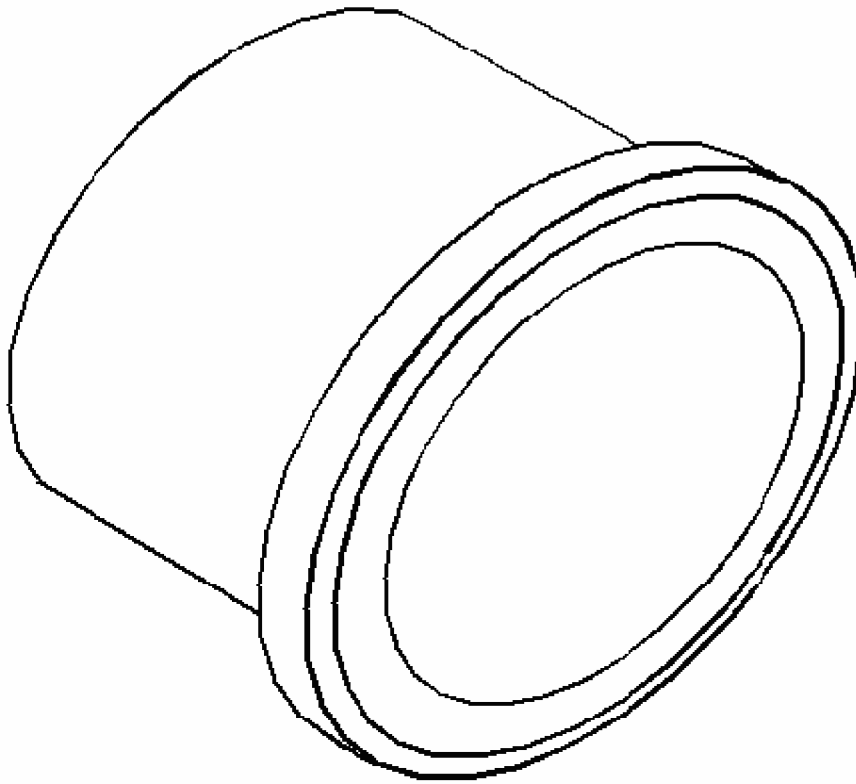


Fig. 58: View Of Boot
Courtesy of GENERAL MOTORS CORP.

5. Install the boot on the piston.

DISC BRAKE HARDWARE REPLACEMENT - FRONT (DUAL PISTON)

Removal Procedure

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

CAUTION: Refer to Brake Fluid Irritant Caution in Cautions and Notices.

1. Raise the vehicle. Refer to Lifting and Jacking the Vehicle in General information.
2. Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation in Tires and Wheels.

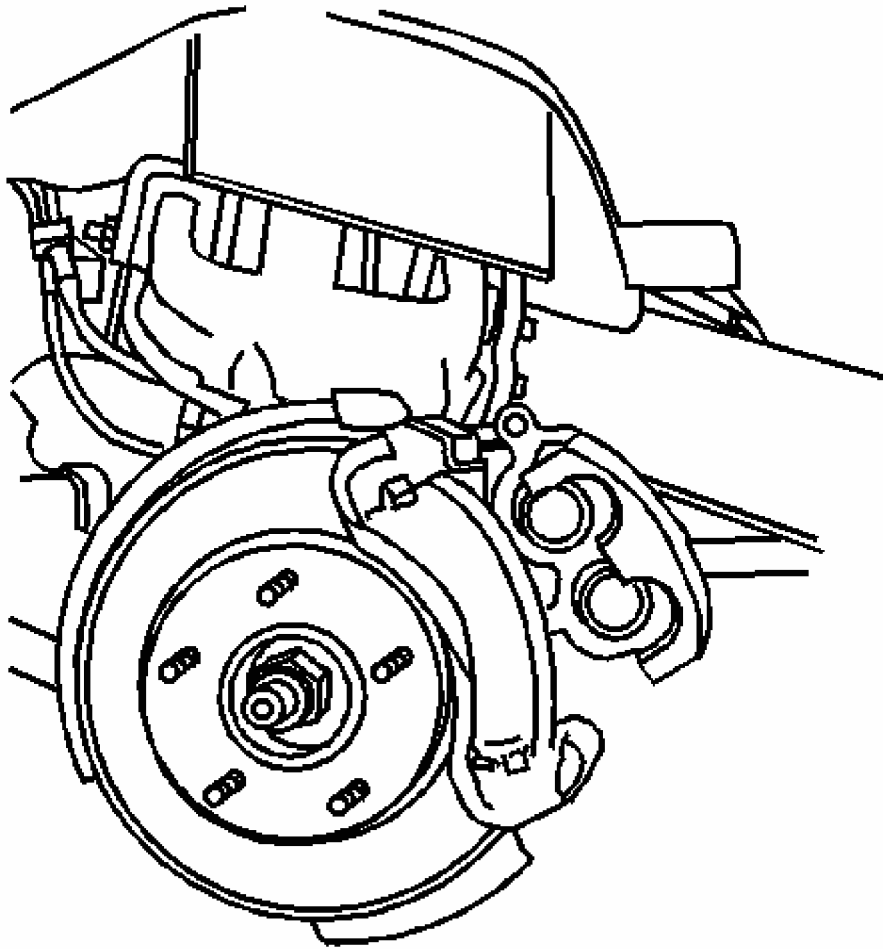


Fig. 59: View Of Brake Caliper Assembly
Courtesy of GENERAL MOTORS CORP.

3. Remove the front brake caliper. Refer to **Brake Caliper Replacement - Front (Dual Piston)**.

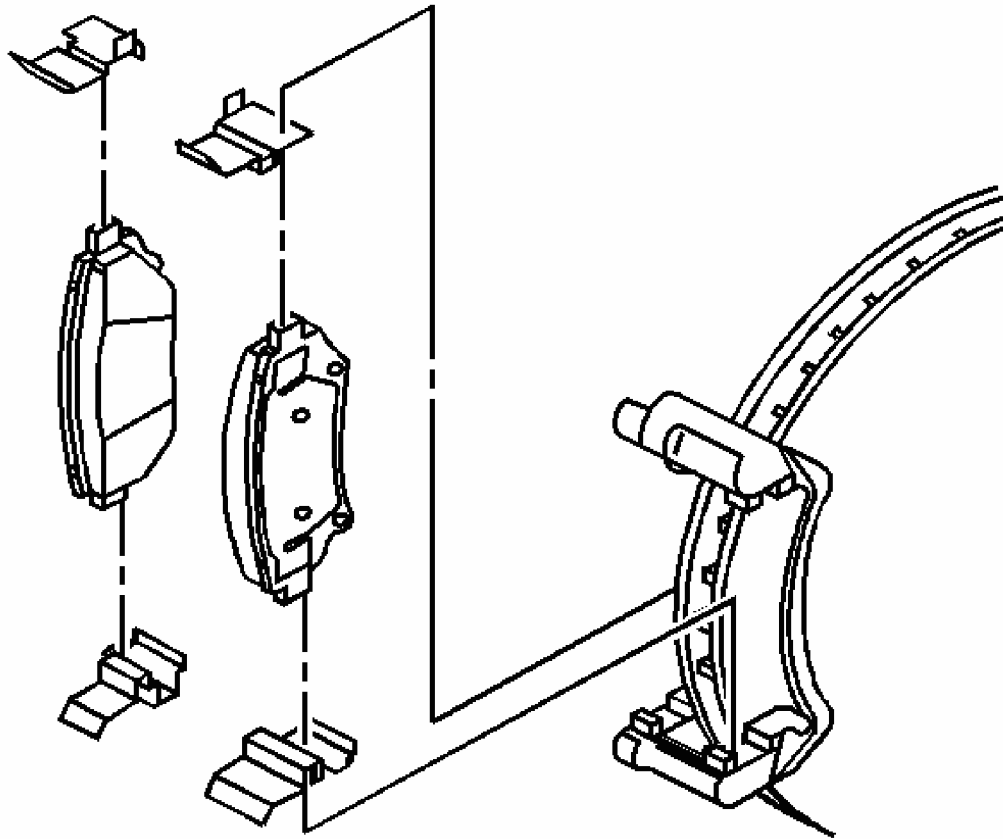


Fig. 60: View Of Brake Pads
Courtesy of GENERAL MOTORS CORP.

4. Remove the front brake pads. Refer to **Brake Pads Replacement - Front (Single Piston Caliper)**.
5. Remove the brake pad wear sensors.

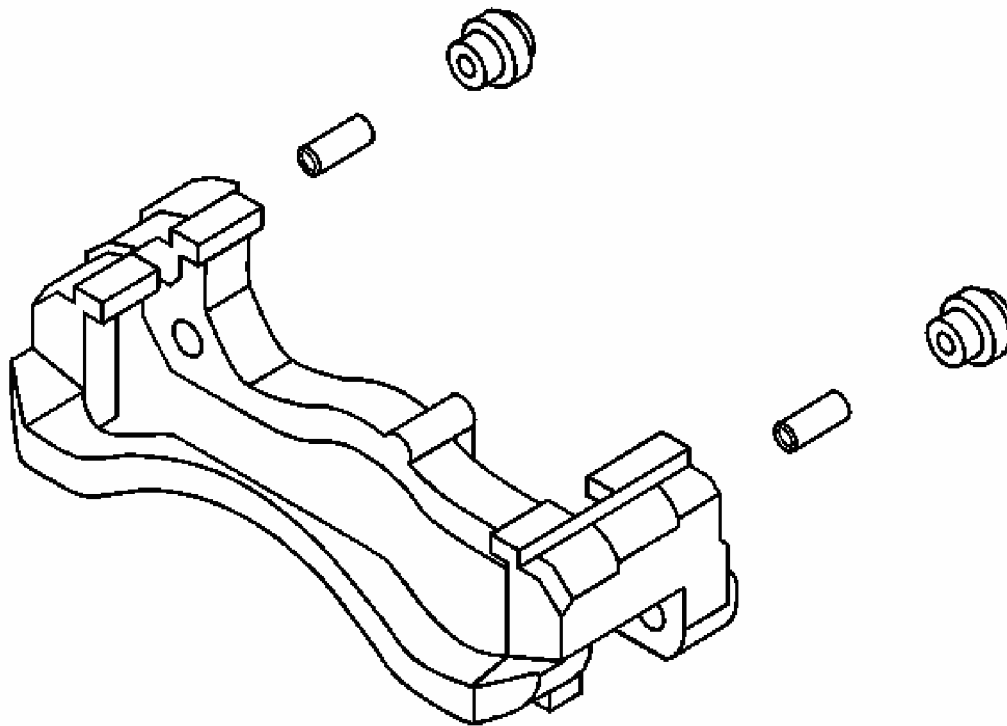


Fig. 61: View Of Brake Caliper Mounting Bracket
Courtesy of GENERAL MOTORS CORP.

6. Remove the bushings from the mounting bracket.
7. Lightly brush all brake pad contact areas.

Installation Procedure

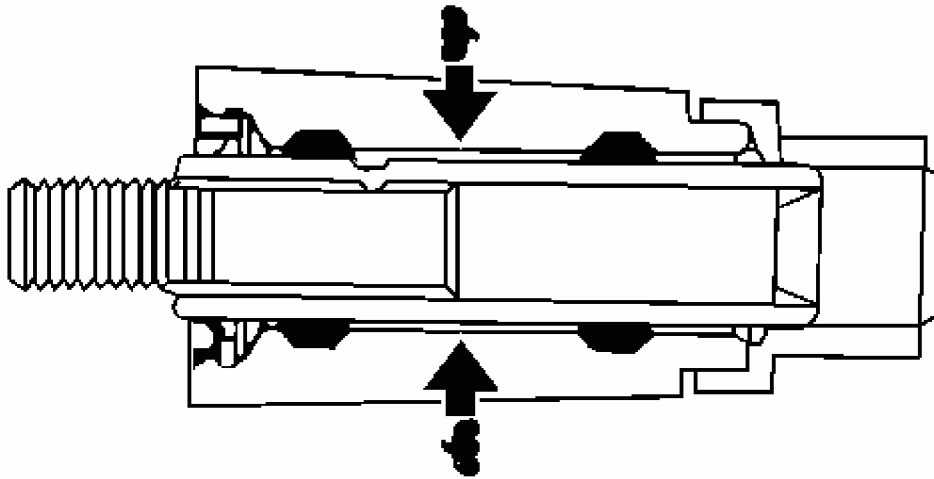


Fig. 62: View Of Brake Caliper Guide Pin
Courtesy of GENERAL MOTORS CORP.

1. Clean area using denatured alcohol.
2. Dry area using non-lubricated, filtered air.
3. Apply high temperature silicone brake lubricant to the brake caliper pin bolts. DO NOT apply lubricant to the brake pad hardware.

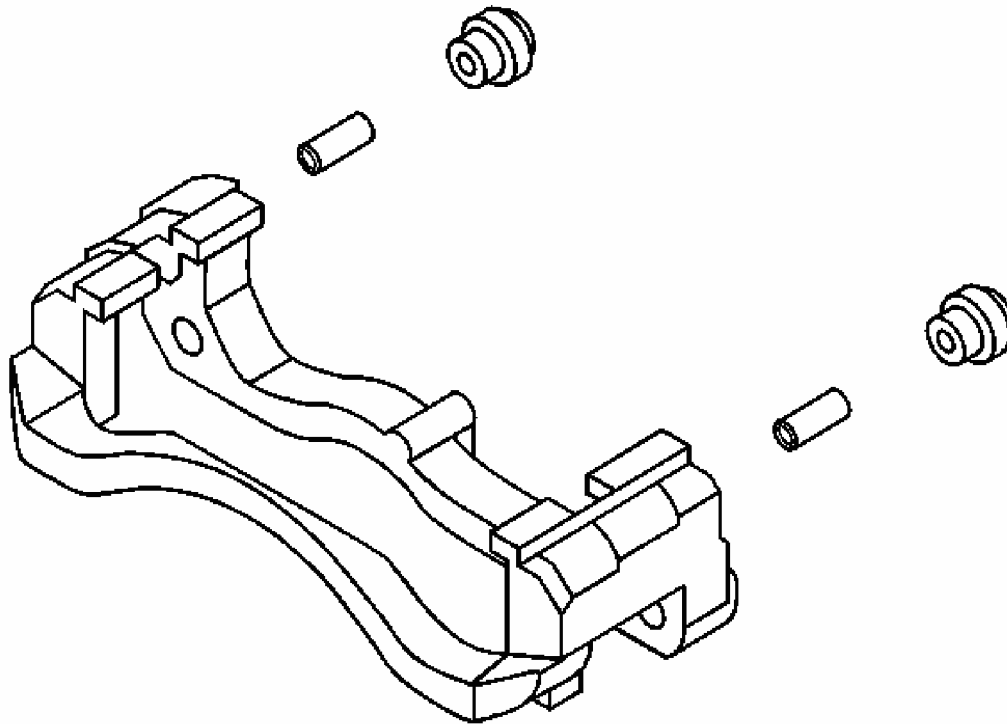


Fig. 63: View Of Brake Caliper Mounting Bracket
Courtesy of GENERAL MOTORS CORP.

4. Install the bushings to the mounting bracket.
5. Install the brake pad wear sensors.

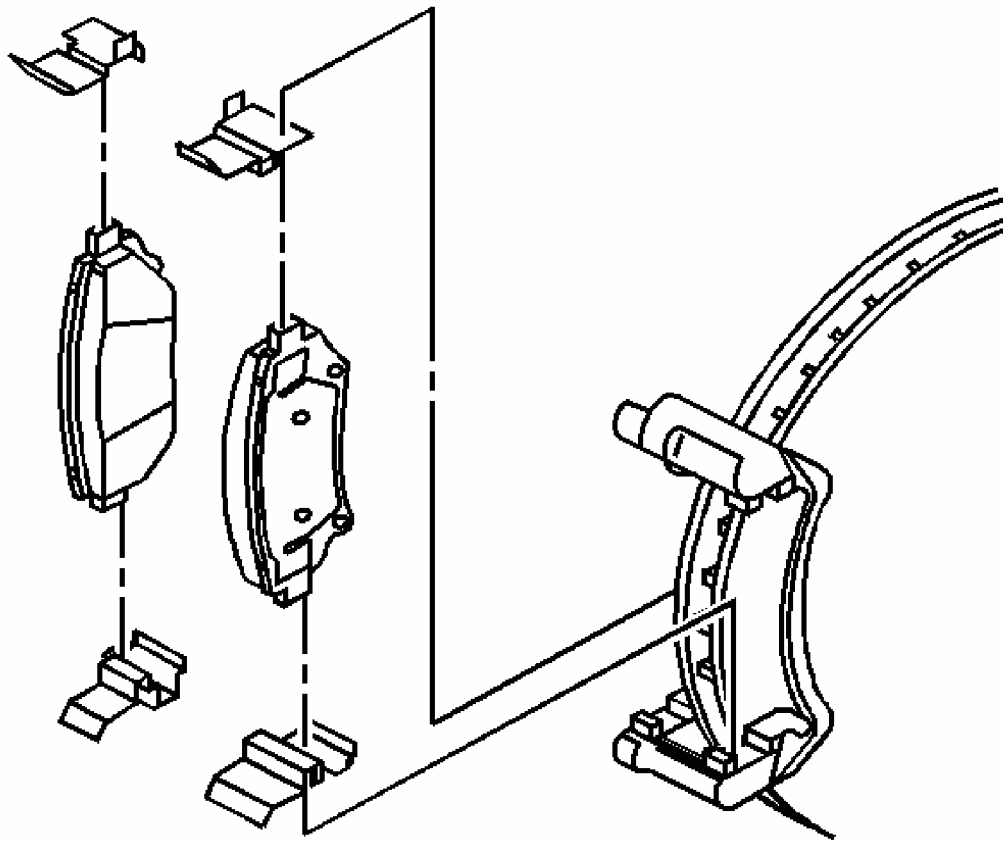


Fig. 64: View Of Brake Pads
Courtesy of GENERAL MOTORS CORP.

6. Install the brake pads.

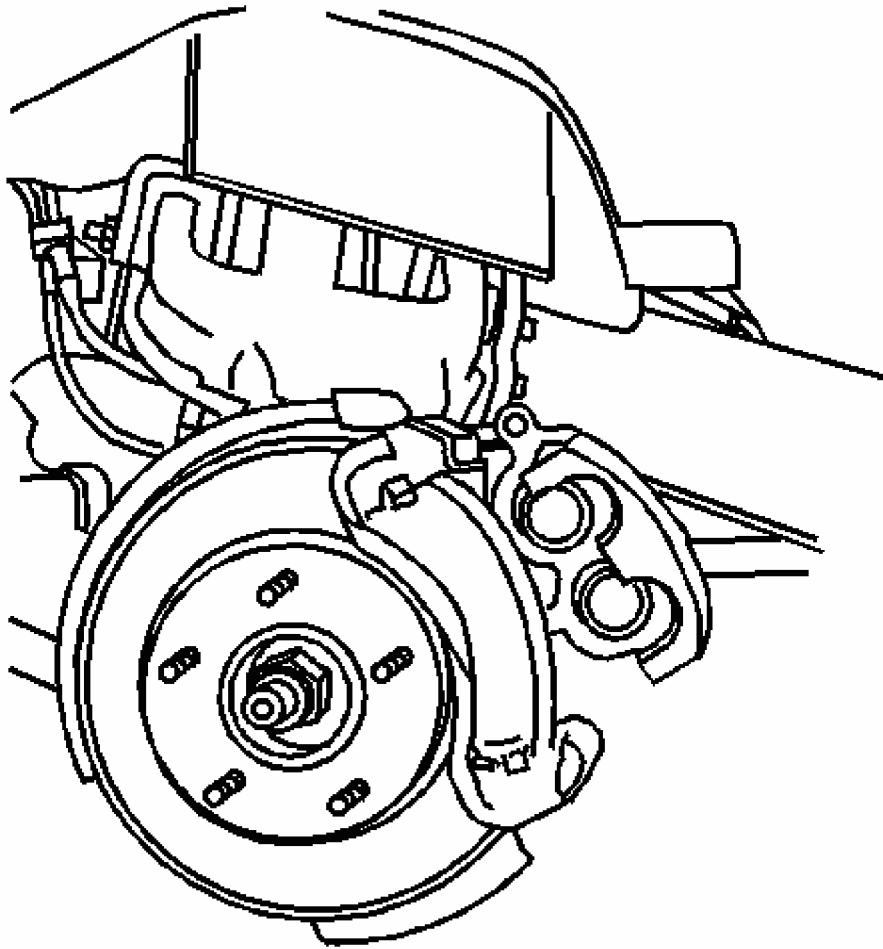


Fig. 65: View Of Brake Caliper Assembly
Courtesy of GENERAL MOTORS CORP.

7. Install the front brake caliper. Refer to **Brake Caliper Replacement - Front (Dual Piston)**.
8. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.
9. Lower the vehicle. Refer to **Lifting and Jacking the Vehicle** in General information.
10. With the engine running, firmly pump the brake pedal three times.

DISC BRAKE HARDWARE REPLACEMENT - FRONT (SINGLE PISTON)

Removal Procedure

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

CAUTION: Refer to Brake Fluid Irritant Caution in Cautions and Notices.

1. Raise the vehicle. Refer to Lifting and Jacking the Vehicle in General information.
2. Remove the tire and wheel assembly. Tire and Wheel Removal and Installation in Tires and Wheels
3. Remove the brake caliper. Refer to Brake Caliper Replacement - Front (Dual Piston).

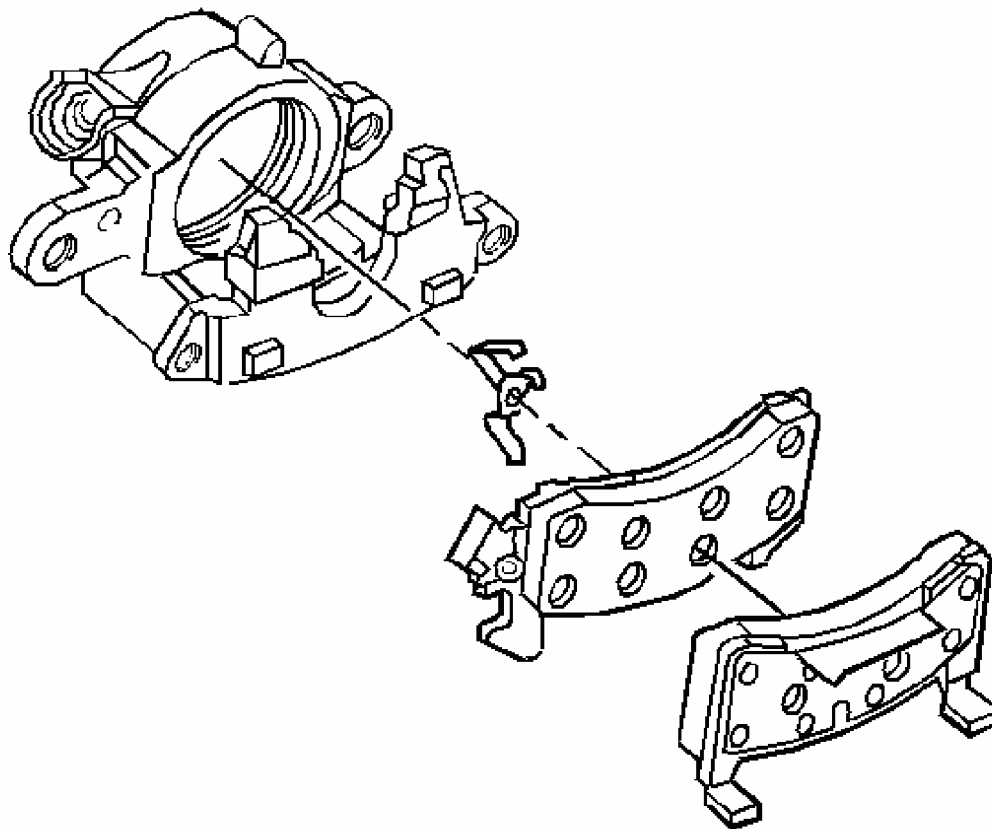


Fig. 66: Exploded View Of Brake Pad Assembly
Courtesy of GENERAL MOTORS CORP.

4. Remove the front brake pads.

5. Remove the front disc brake inner pad retainer spring.

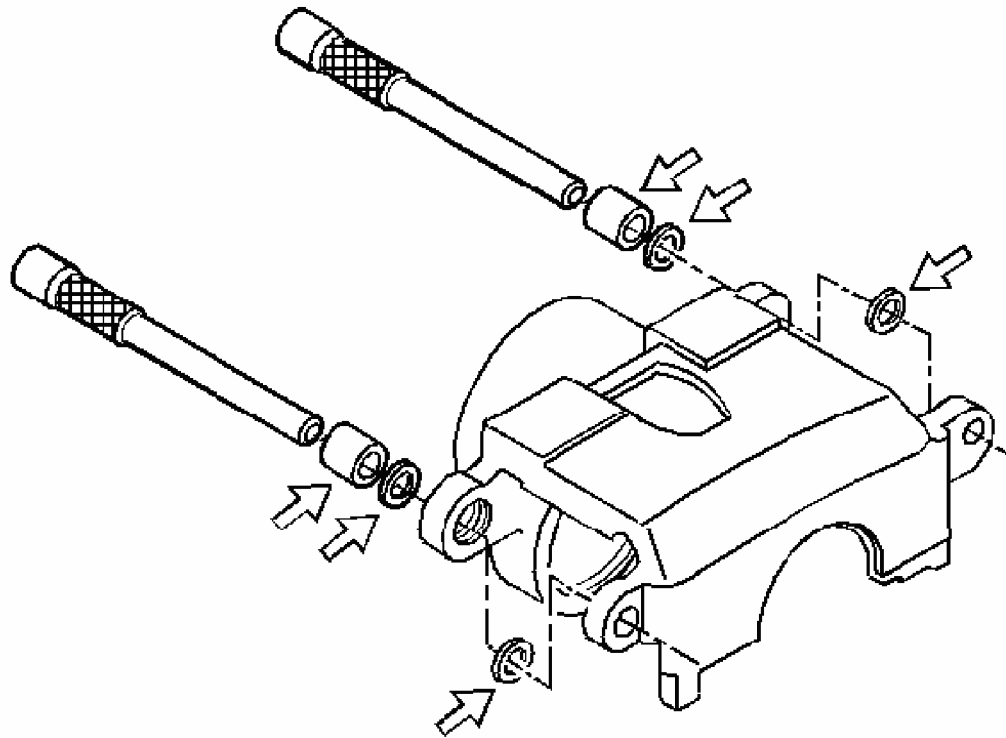


Fig. 67: View Of Brake Caliper Assembly
Courtesy of GENERAL MOTORS CORP.

6. Remove the following parts from the brake caliper.
 - Front brake caliper bolt
 - Front brake caliper bolt sleeve
 - Front brake caliper bolt sleeve bushing
7. Lightly brush all brake pad contact areas.

Installation Procedure

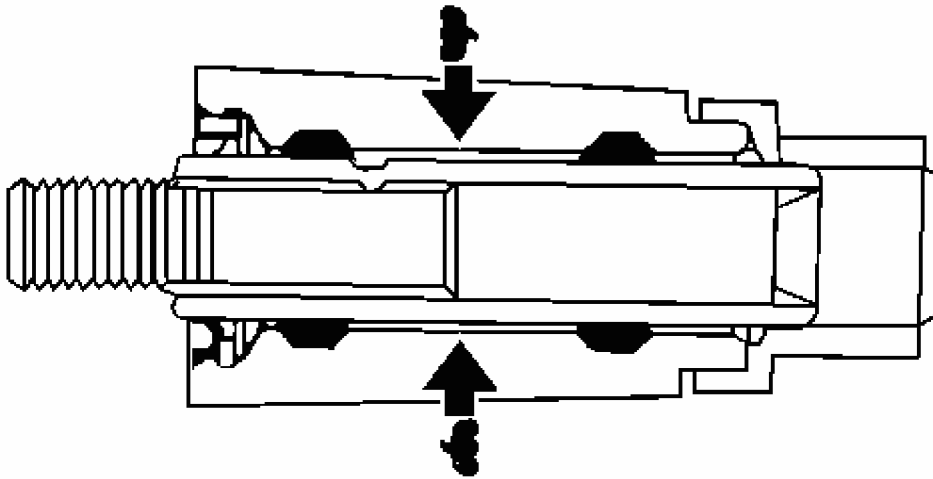


Fig. 68: View Of Brake Caliper Guide Pin
Courtesy of GENERAL MOTORS CORP.

1. Clean area using denatured alcohol.
2. Dry area using non lubricated, filtered compressed air.
3. Apply high temperature silicone brake lubricant to the brake caliper pin bolts and retainers. DO NOT apply lubricant to the brake pad hardware.

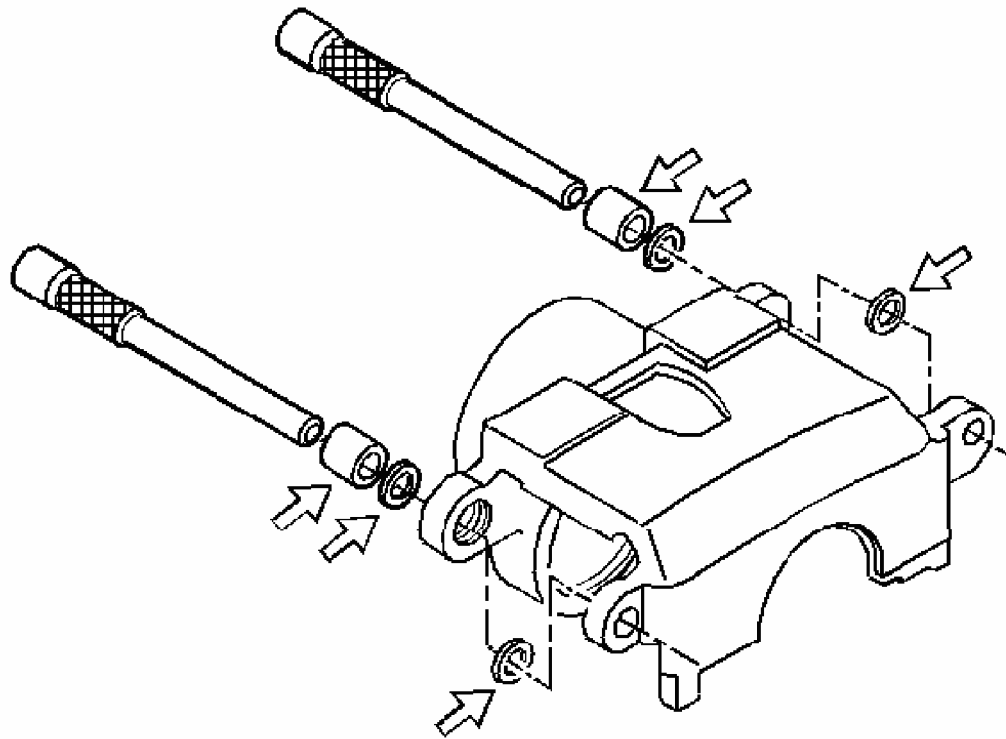


Fig. 69: View Of Brake Caliper Assembly
Courtesy of GENERAL MOTORS CORP.

4. Install the following parts on the brake caliper.
 - Front brake caliper bolt
 - Front brake caliper bolt sleeve
 - Front brake caliper bolt sleeve bushing

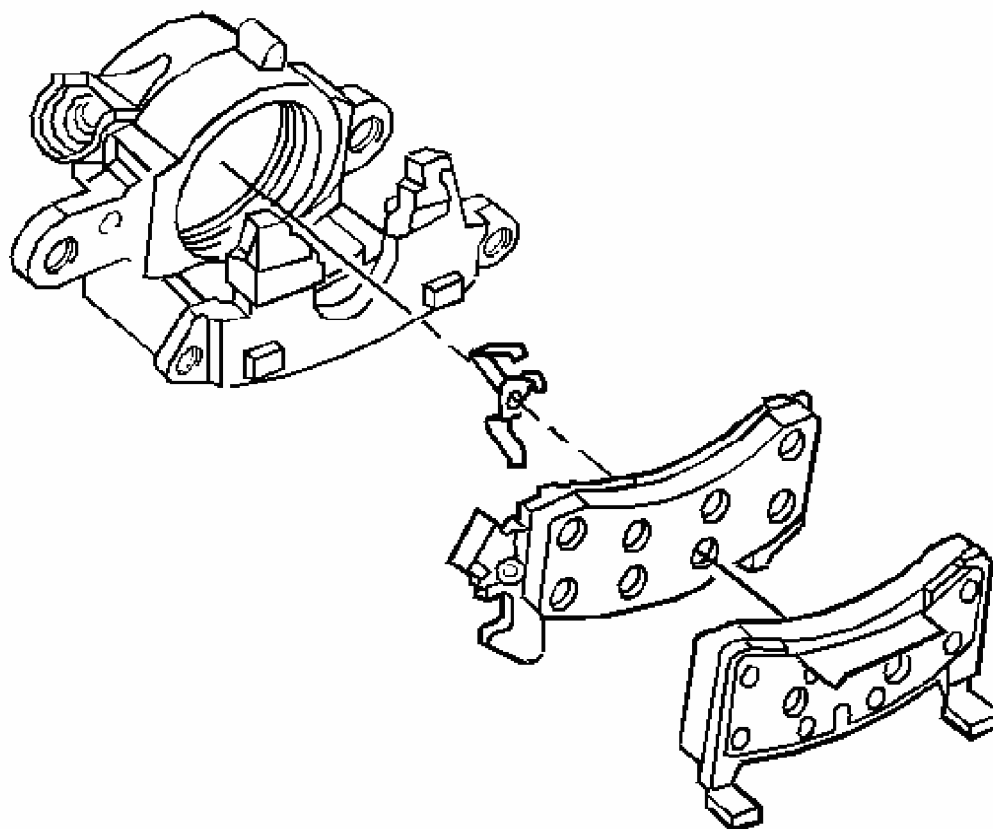


Fig. 70: Exploded View Of Brake Pad Assembly
Courtesy of GENERAL MOTORS CORP.

5. Install the inner brake pad retainer spring.
6. Install the brake pad to the brake caliper bracket. Refer to **Brake Pads Replacement - Front (Single Piston Caliper)**.
7. Install the tire and wheel assembly. **Tire and Wheel Removal and Installation** in Tires and Wheels
8. Lower the vehicle. Refer to **Lifting and Jacking the Vehicle** in General information.
9. With the engine running, firmly pump the brake pedal three times.

DISC BRAKE HARDWARE REPLACEMENT - REAR

Removal Procedure

CAUTION: Refer to **Brake Dust Caution** in Cautions and Notices.

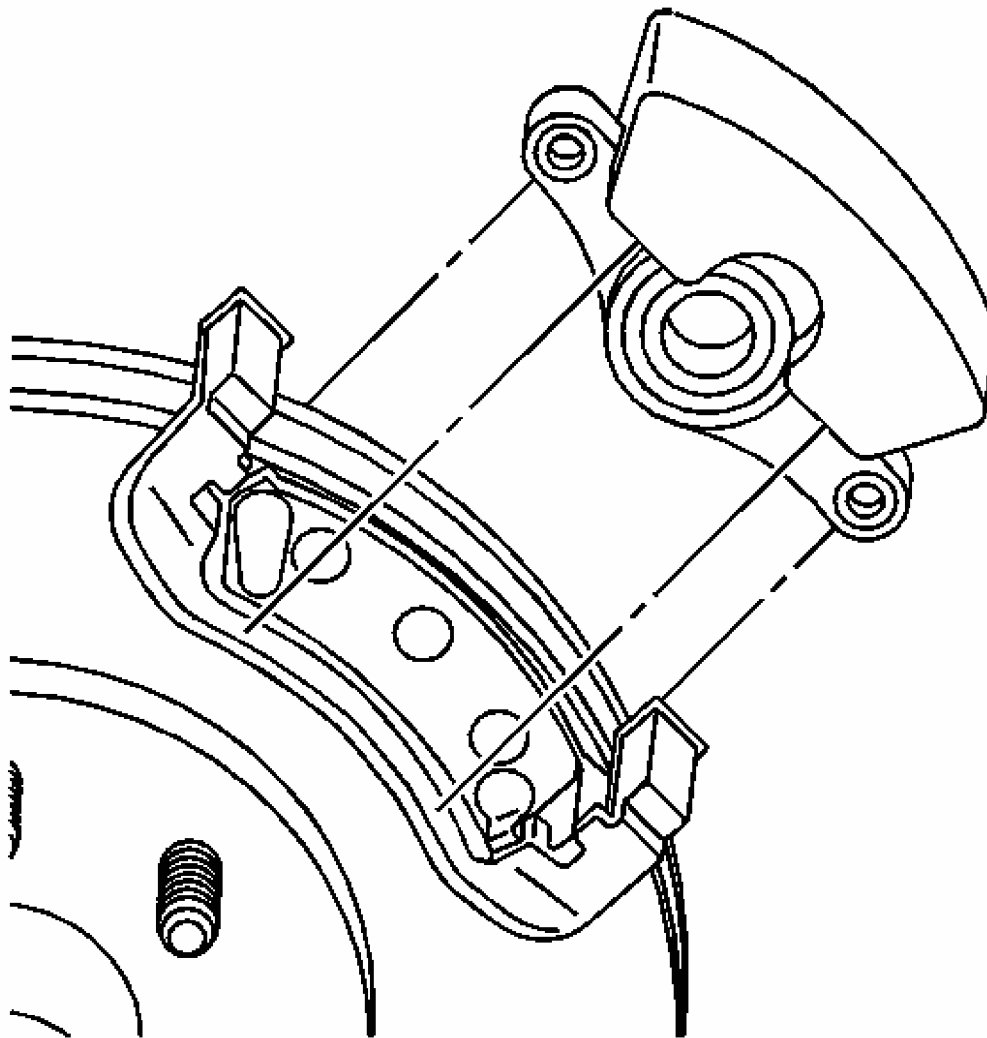


Fig. 71: View Of Brake Caliper Assembly
Courtesy of GENERAL MOTORS CORP.

1. Remove the disc brake caliper. Refer to **Brake Caliper Replacement - Rear**.

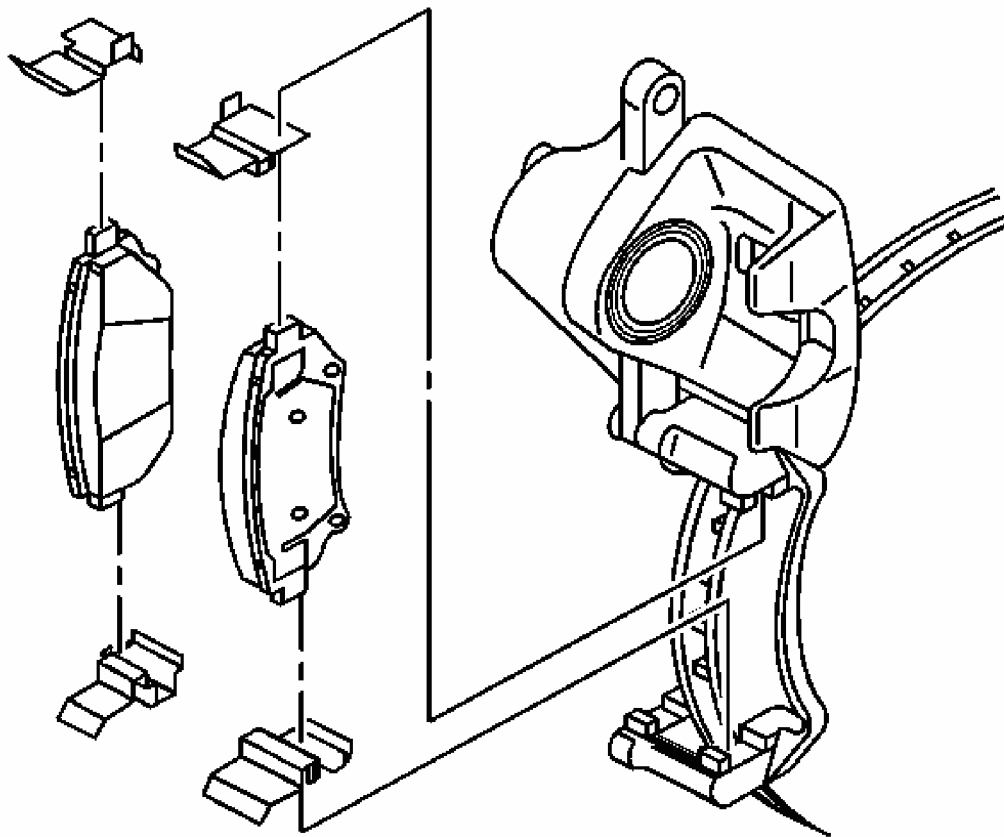


Fig. 72: View Of Brake Pads & Caliper Bracket - Rear
Courtesy of GENERAL MOTORS CORP.

2. Remove the disc brake pads.
3. Remove the disc brake pad retainers.

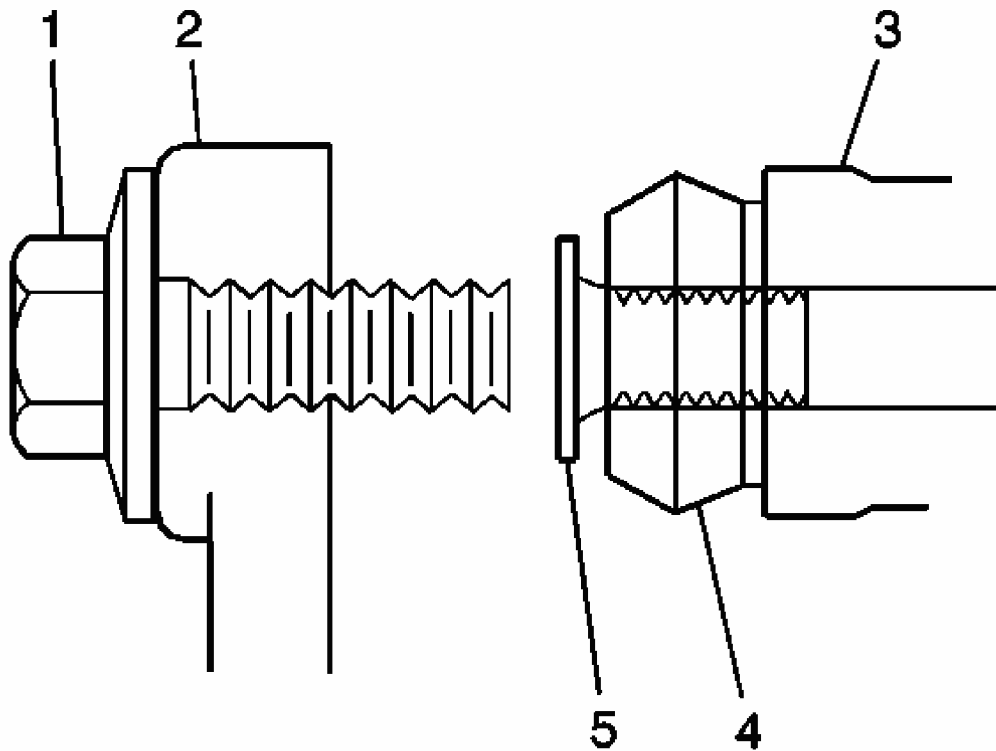


Fig. 73: Caliper Mounting Bolt, Bracket, Boot & Slid Pins
Courtesy of GENERAL MOTORS CORP.

4. Remove the caliper pins (5) from the disc brake caliper mounting bracket (3).
5. Remove the caliper pin boots (4) from the disc brake caliper mounting bracket.
6. Lightly wire brush all brake pad contact areas in order to remove any corrosion.

Installation Procedure

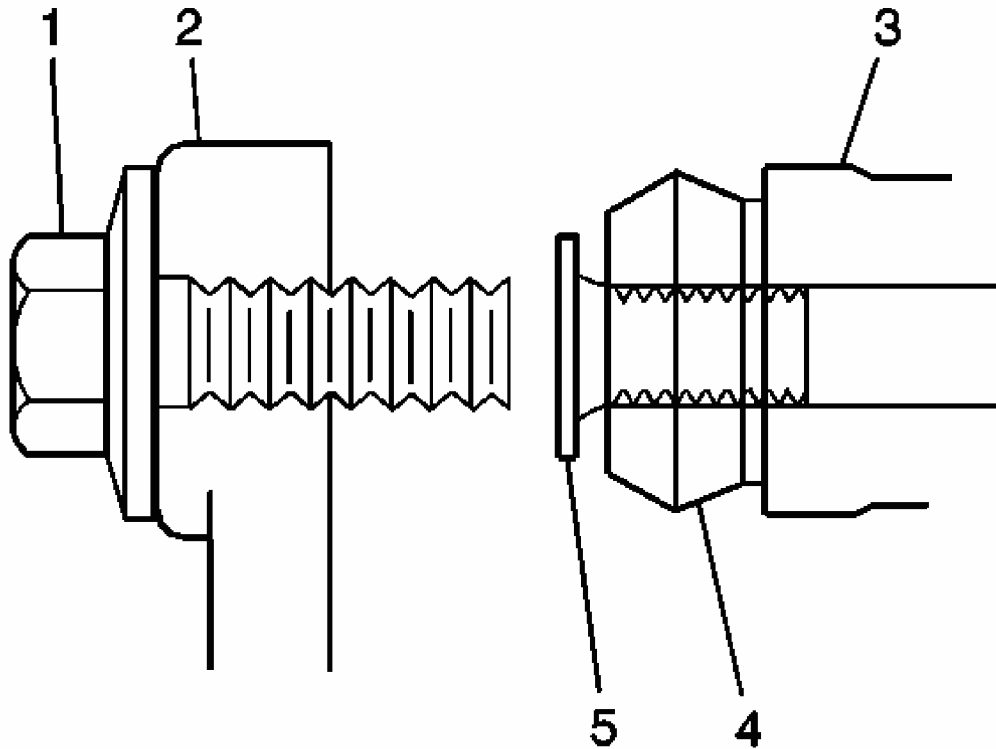


Fig. 74: Caliper Mounting Bolt, Bracket, Boot & Slid Pins
Courtesy of GENERAL MOTORS CORP.

1. Install the caliper pin boots (4) to the disc brake caliper mounting bracket.
2. Install the caliper pins (5) to the disc brake caliper mounting bracket (3).

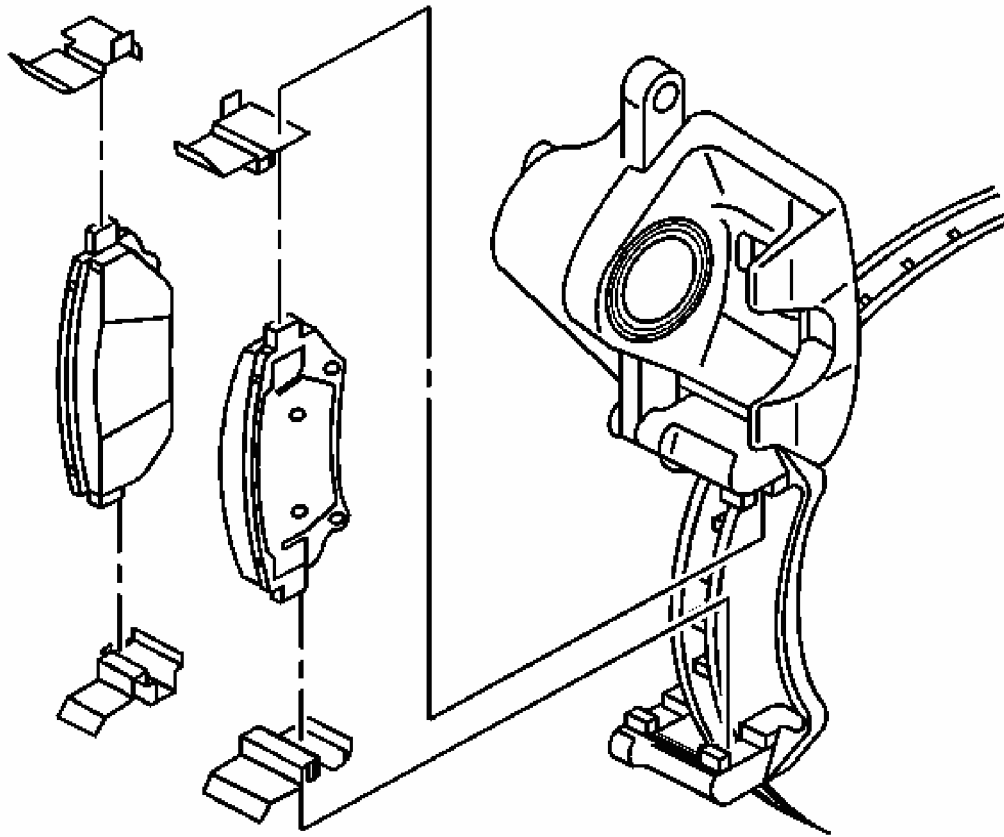


Fig. 75: View Of Brake Pads & Caliper Bracket - Rear
Courtesy of GENERAL MOTORS CORP.

3. Install the disc brake pad retainers
4. Install the disc brake pads.

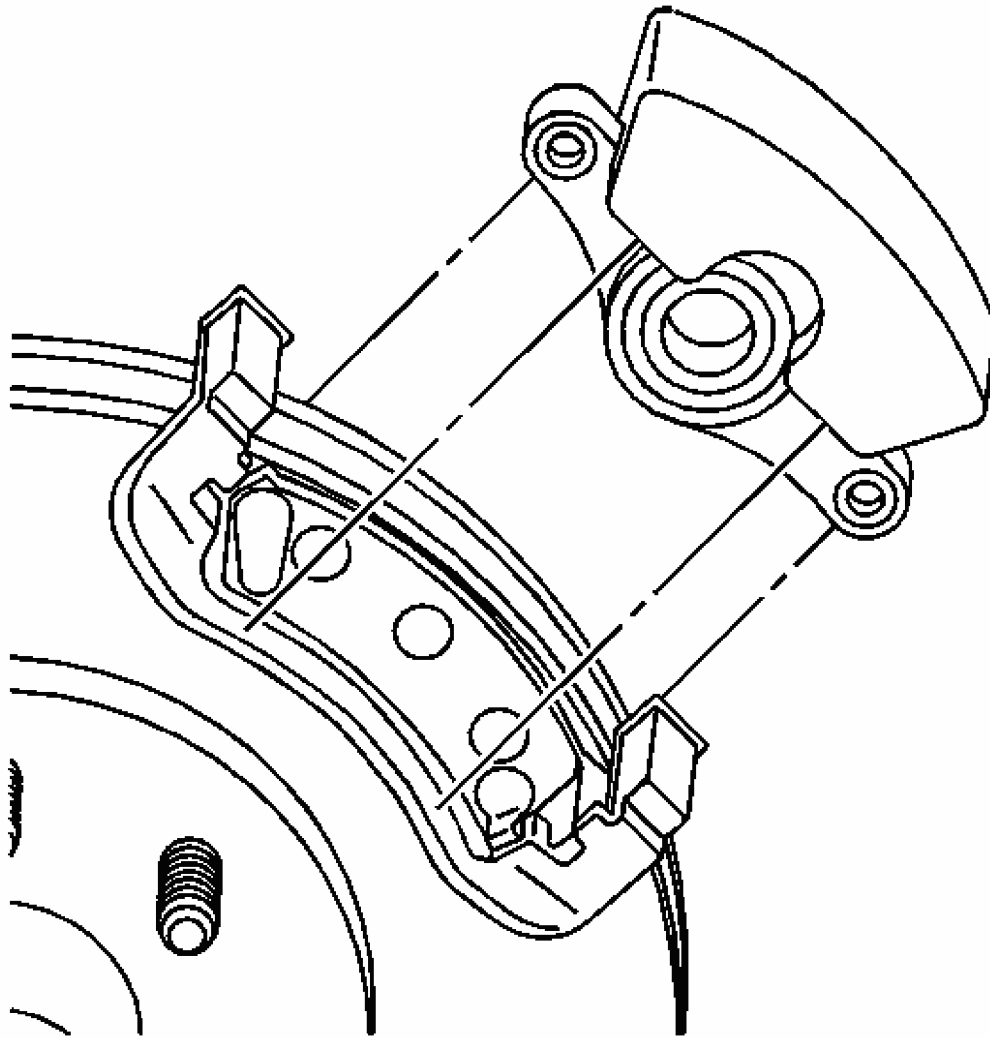


Fig. 76: View Of Brake Caliper Assembly
Courtesy of GENERAL MOTORS CORP.

5. Install the brake caliper assembly. Refer to **Brake Caliper Replacement - Rear**.
6. With the engine OFF, gradually apply the brake pedal to approximately 2/3 of its travel distance.
7. Slowly release the brake pedal.
8. Wait 15 seconds, then repeat steps 7-8 until a firm brake pedal is obtained. This will properly seat the brake caliper pistons and brake pads.
9. Fill the brake master cylinder to the proper level. Refer to **Master Cylinder Reservoir Filling** in Hydraulic Brakes.

BRAKE CALIPER BRACKET REPLACEMENT - FRONT

Removal Procedure

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

1. Raise the vehicle. Refer to Lifting and Jacking the Vehicle in General Information.
2. Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation in Tires and Wheels.

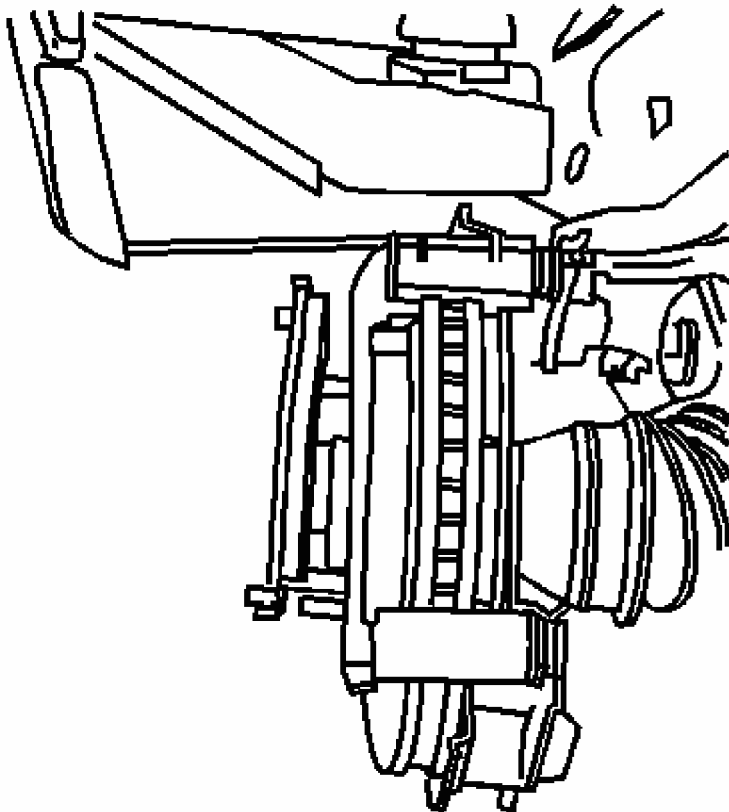


Fig. 77: View Of Outboard Front Brake Pads
Courtesy of GENERAL MOTORS CORP.

3. Remove the front brake pads, outboard shown. Refer to Brake Pads Replacement - Front (Single Piston Caliper).

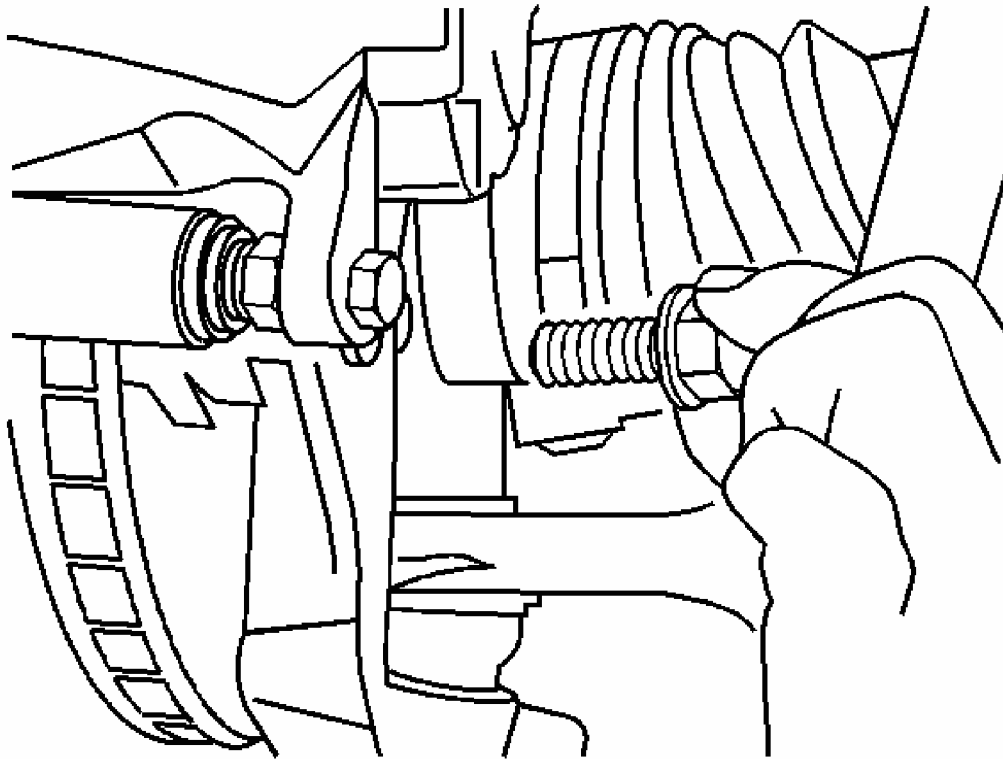


Fig. 78: Caliper Mounting View
Courtesy of GENERAL MOTORS CORP.

4. Remove the front brake caliper bracket mounting bolts, lower shown.

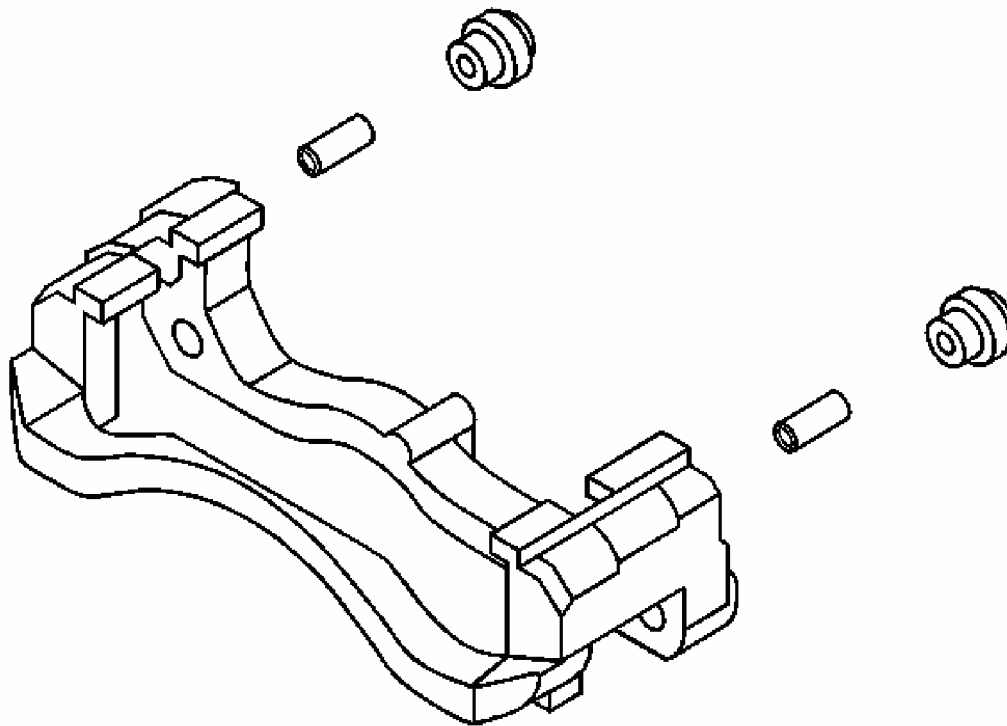


Fig. 79: View Of Brake Caliper Mounting Bracket
Courtesy of GENERAL MOTORS CORP.

5. Remove the front brake caliper mounting bracket.

Installation Procedure

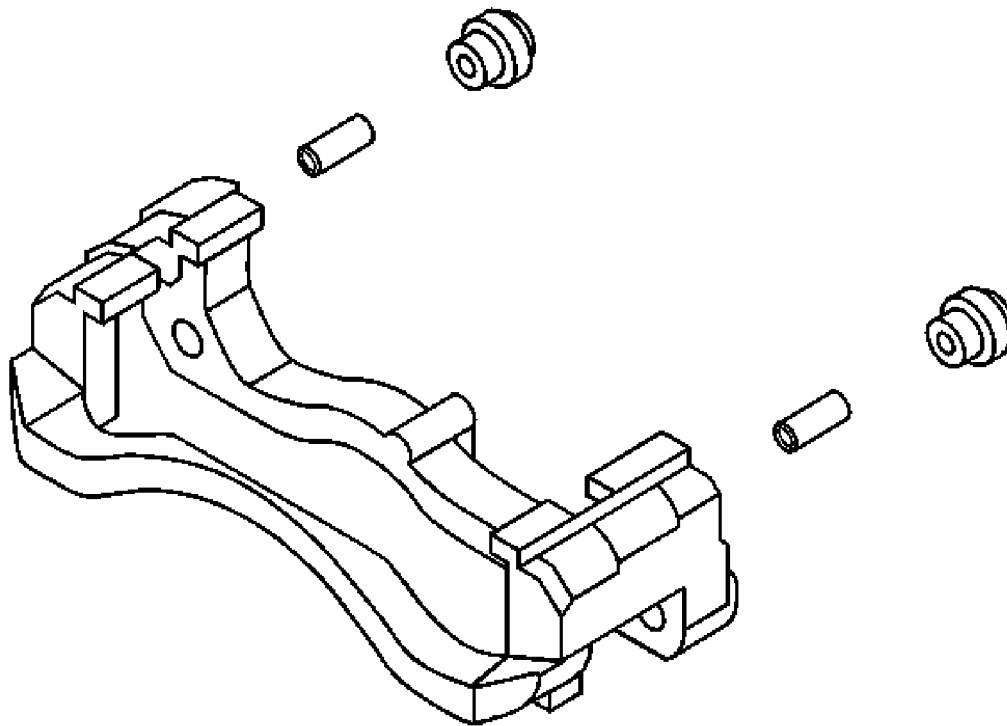


Fig. 80: View Of Brake Caliper Mounting Bracket
Courtesy of GENERAL MOTORS CORP.

1. Install the new bushing and sleeves.

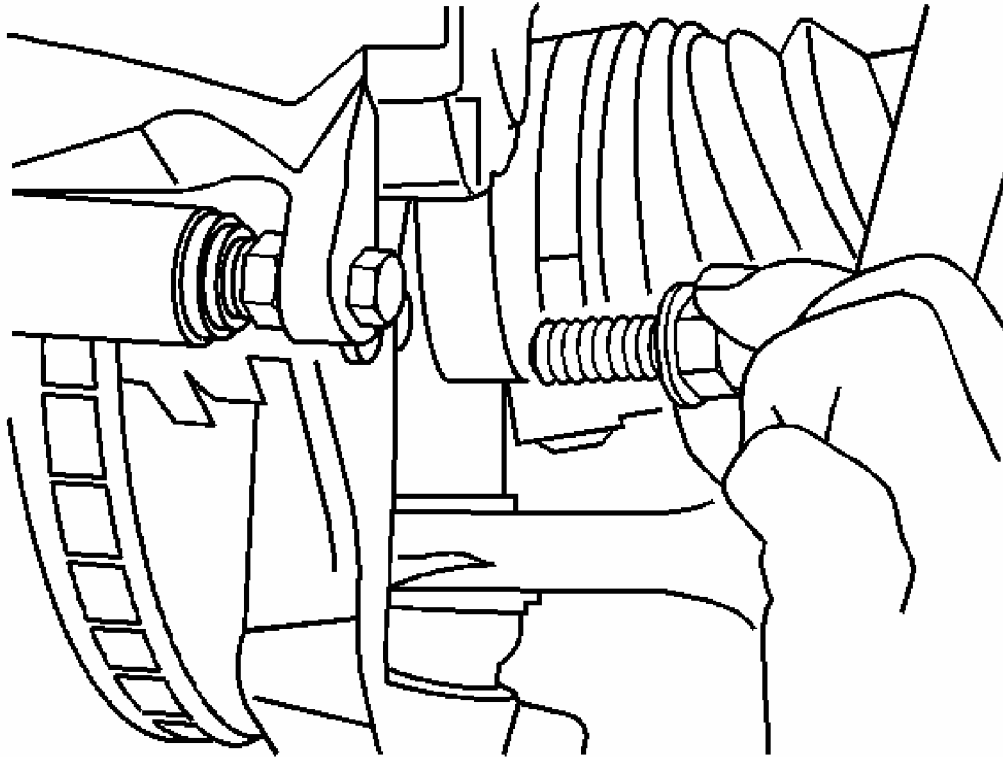


Fig. 81: Caliper Mounting View
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the front brake caliper bracket mounting bolts, lower shown.

Tighten: Tighten the brake caliper mounting bracket bolt to 180 N.m (133 lb ft).

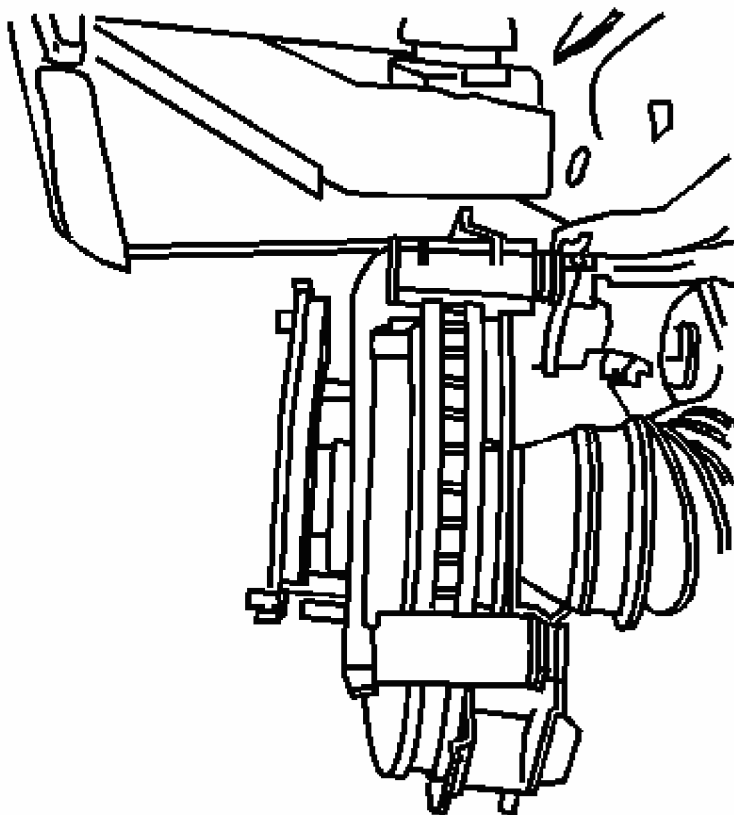


Fig. 82: View Of Outboard Front Brake Pads
Courtesy of GENERAL MOTORS CORP.

3. Install the brake pad assembly. Refer to **Brake Pads Replacement - Front (Single Piston Caliper)**.
4. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.
5. Lower the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
6. With the engine OFF, gradually apply the brake pedal to approximately 2/3 of its travel distance.
7. Slowly release the brake pedal.
8. Wait 15 seconds, then repeat steps 6 and 7 until a firm brake pedal is obtained. This will properly seat the brake caliper pistons and brake pads.
9. Fill the brake master cylinder to the proper level. Refer to **Master Cylinder Reservoir Filling** in Hydraulic Brakes.

BRAKE CALIPER BRACKET REPLACEMENT - REAR

Removal Procedure

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

1. Raise the vehicle. Refer to Lifting and Jacking the Vehicle in General Information.
2. Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation in Tires and Wheels.

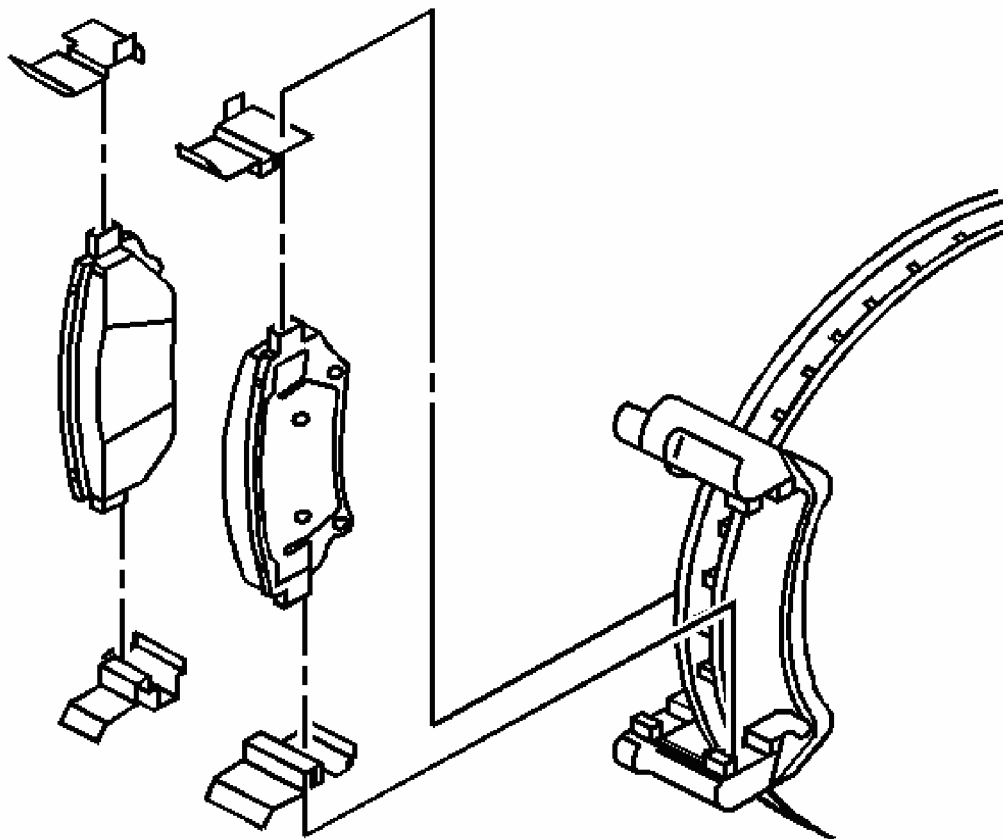


Fig. 83: View Of Brake Pads
Courtesy of GENERAL MOTORS CORP.

3. Remove the rear brake pads. Refer to Brake Pads Replacement - Rear.
4. Remove the anti rattle retainers.

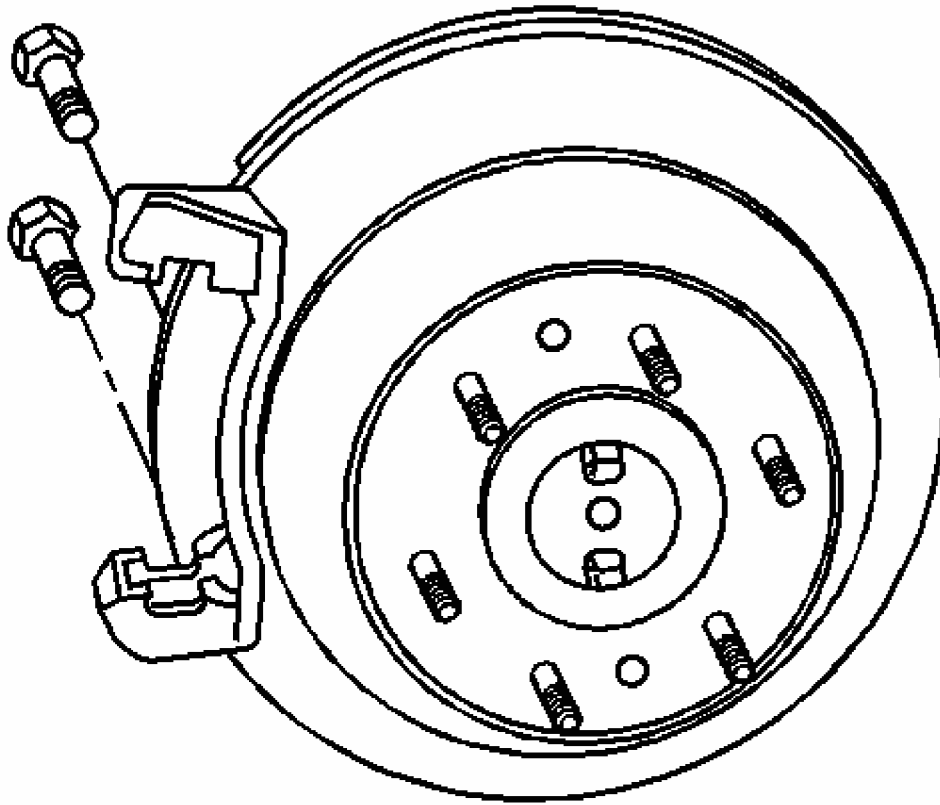


Fig. 84: View Of Rear Brake Caliper Bracket Mounting Bolts
Courtesy of GENERAL MOTORS CORP.

5. Remove the rear brake caliper bracket mounting bolts.

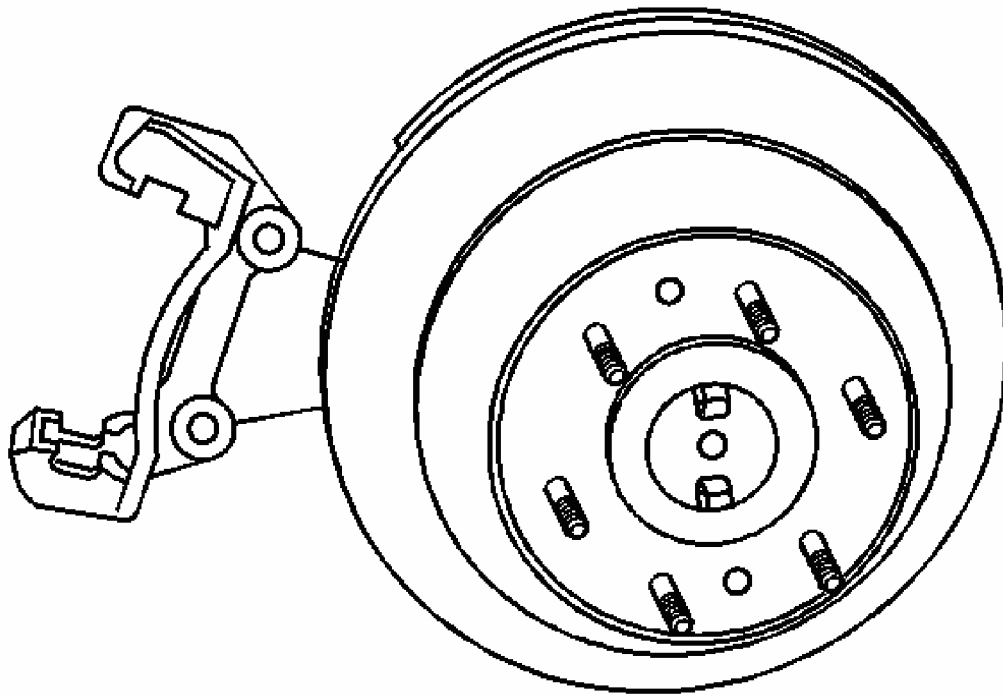


Fig. 85: View Of Caliper Mounting Bracket & Rotor
Courtesy of GENERAL MOTORS CORP.

6. Remove the rear brake caliper bracket.

Installation Procedure

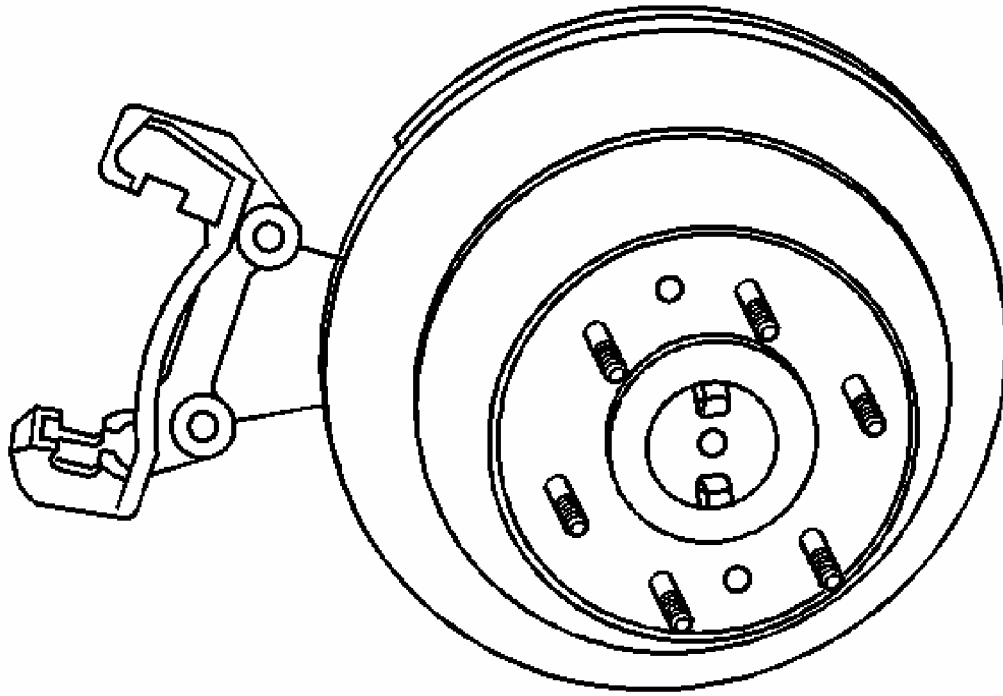


Fig. 86: View Of Caliper Mounting Bracket & Rotor
Courtesy of GENERAL MOTORS CORP.

1. Install the caliper bracket.

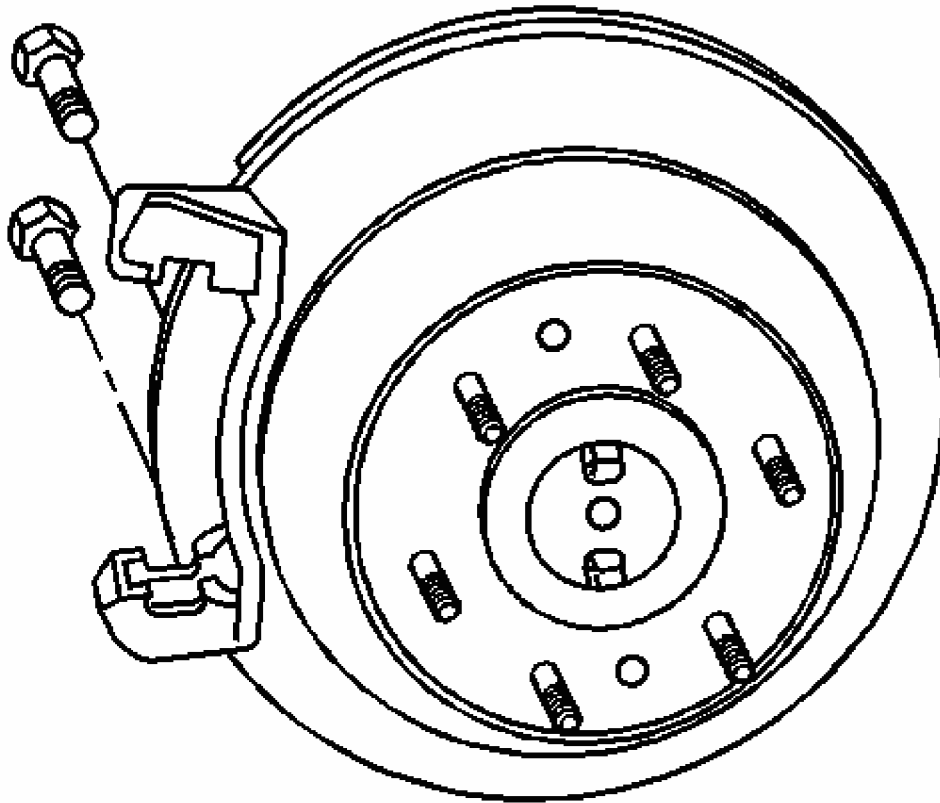


Fig. 87: View Of Rear Brake Caliper Bracket Mounting Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the rear brake caliper bracket mounting bolts.

Tighten: Tighten the rear brake caliper bracket mounting bolts to 70 N.m (52 lb ft).

3. Install the rear brake anti rattle retainers.

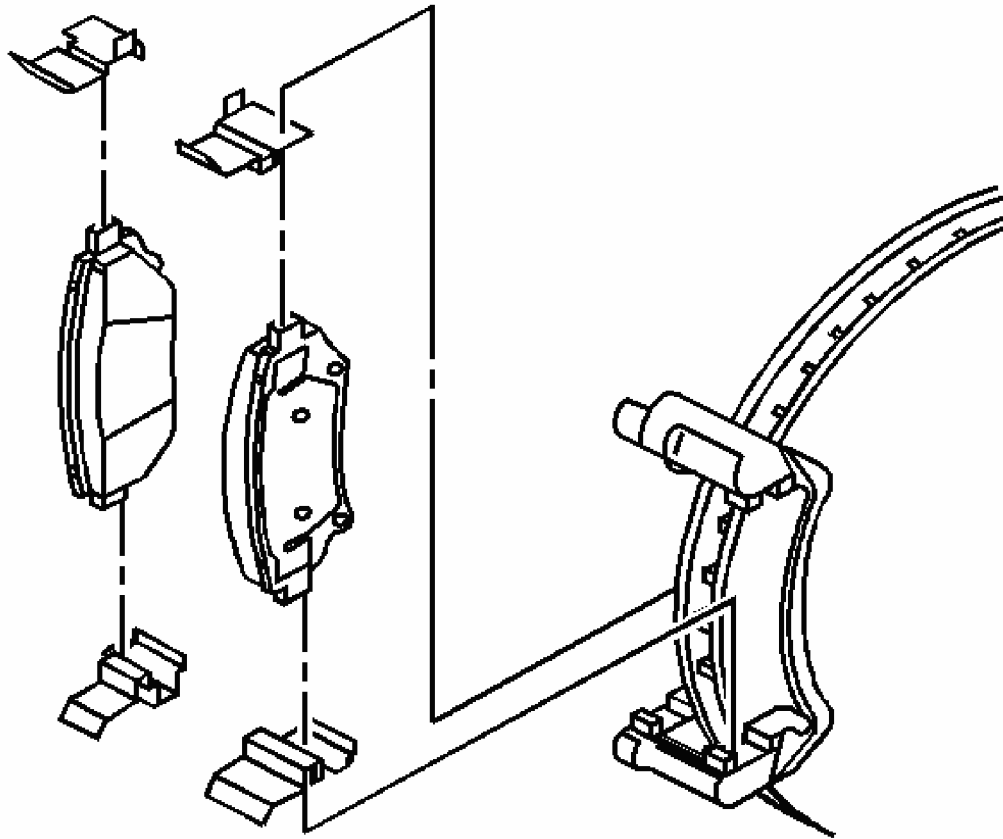


Fig. 88: View Of Brake Pads
Courtesy of GENERAL MOTORS CORP.

4. Install the rear brake pads. Refer to **Brake Pads Replacement - Rear**
5. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.
6. Lower the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
7. With the engine OFF, gradually apply the brake pedal to approximately 2/3 of its travel distance.
8. Slowly release the brake pedal.
9. Wait 15 seconds, then repeat steps 6-7 until a firm brake pedal is obtained. This will properly seat the brake caliper pistons and brake pads.
10. Fill the brake master cylinder to the proper level. Refer to **Master Cylinder Reservoir Filling** in Hydraulic Brakes.

Tools Required

J 42450-A Wheel Hub Resurfacing Kit. See Special Tools and Equipment.

Removal Procedure

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

IMPORTANT: The following service procedures apply's to both 4 wheel and 2 wheel drive vehicles.

1. Raise the vehicle. Refer to Lifting and Jacking the Vehicle in General Information.
2. Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation in Tires and Wheels.

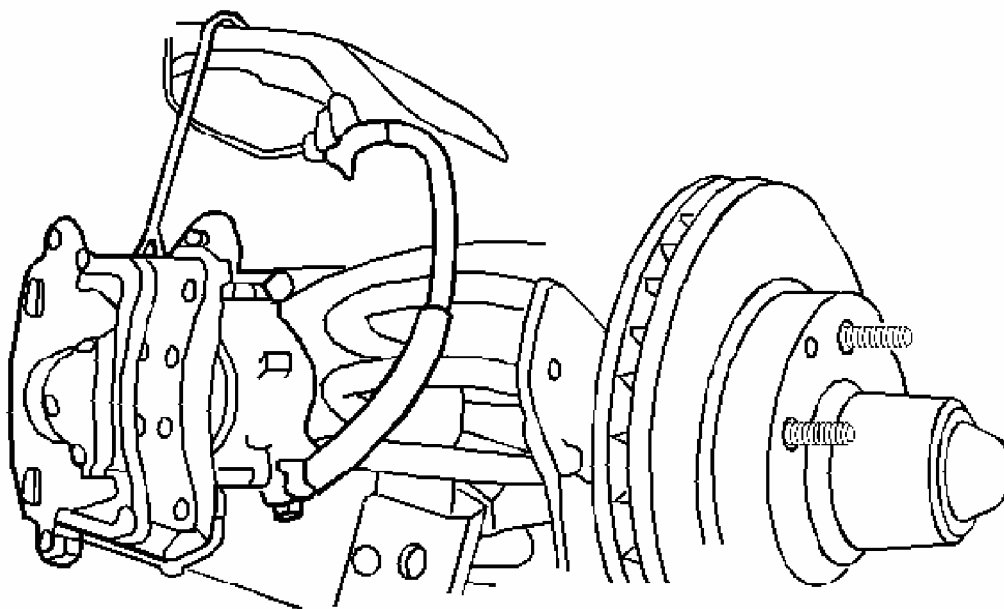


Fig. 89: View Of Brake Assembly
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Brake Caliper Notice in Cautions and Notices.

3. Remove the brake caliper, 2 wheel drive vehicles. Refer to Brake Caliper

Replacement - Front (Dual Piston).

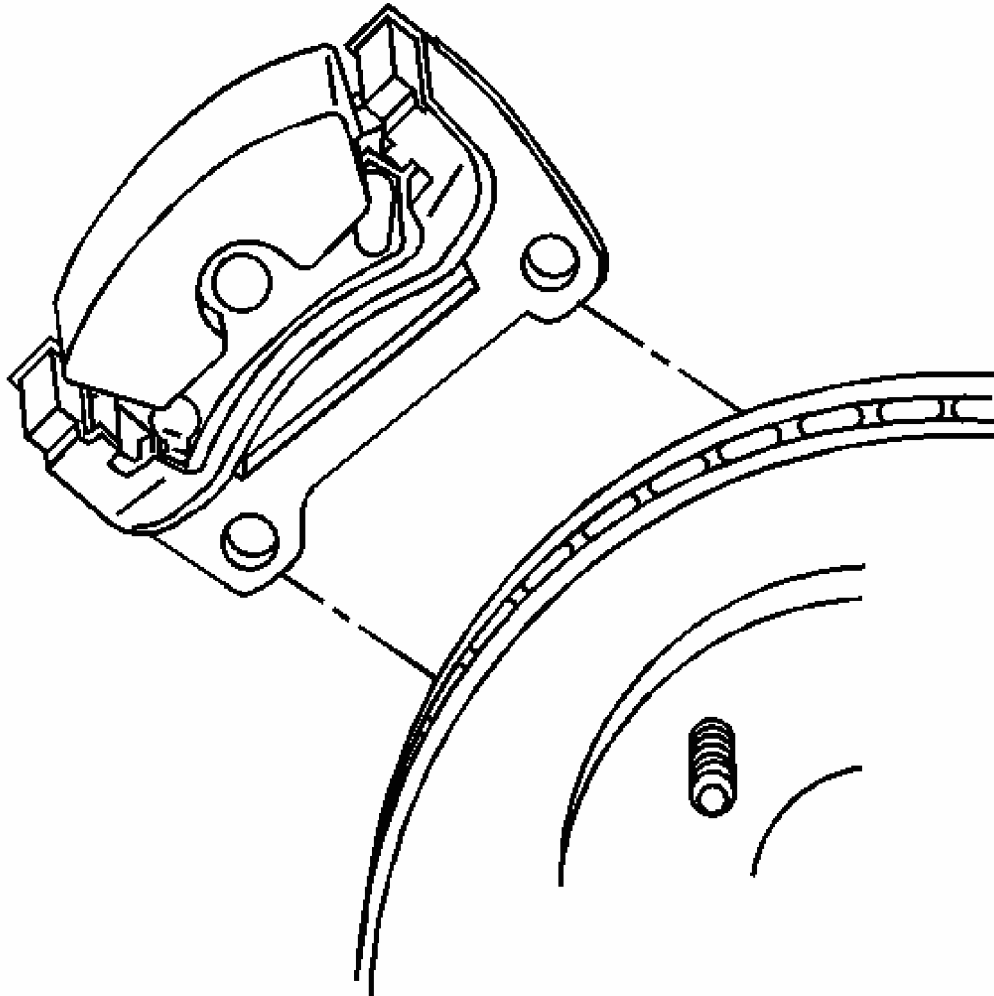


Fig. 90: View Of Caliper Bracket
Courtesy of GENERAL MOTORS CORP.

4. Remove the brake caliper and mounting bracket, 4 wheel drive. Refer to **Brake Caliper Bracket Replacement - Front**

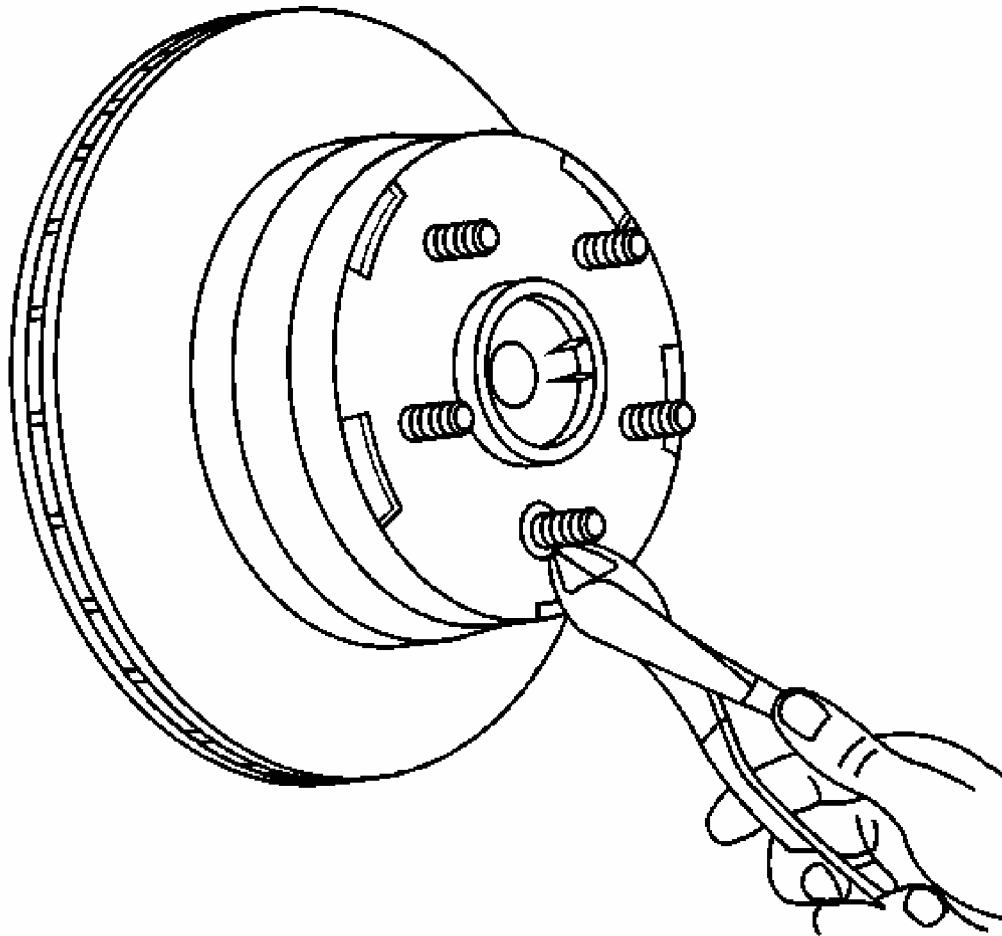


Fig. 91: Removing Retaining Rings
Courtesy of GENERAL MOTORS CORP.

5. Remove the retaining ring, 4 wheel drive vehicles only.

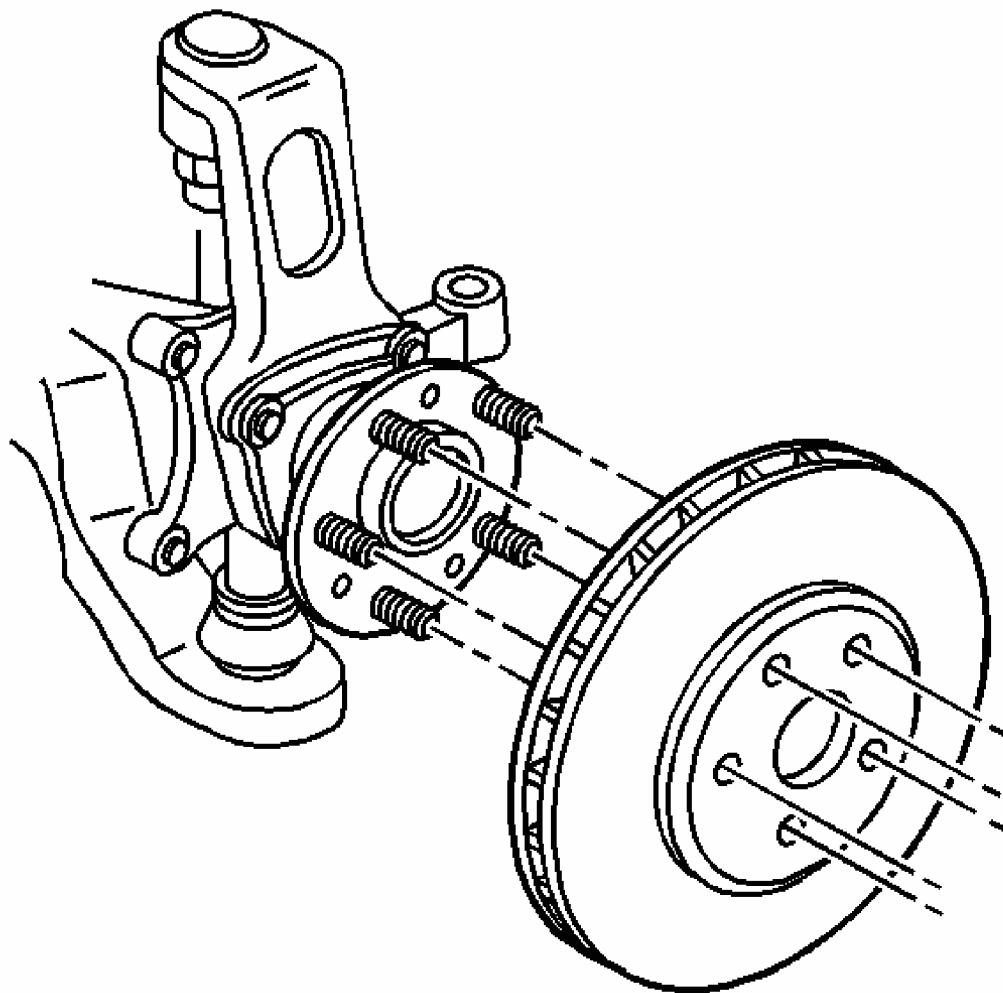


Fig. 92: View Of Brake Rotor
Courtesy of GENERAL MOTORS CORP.

6. Remove the brake rotor, 4 wheel drive vehicles only.

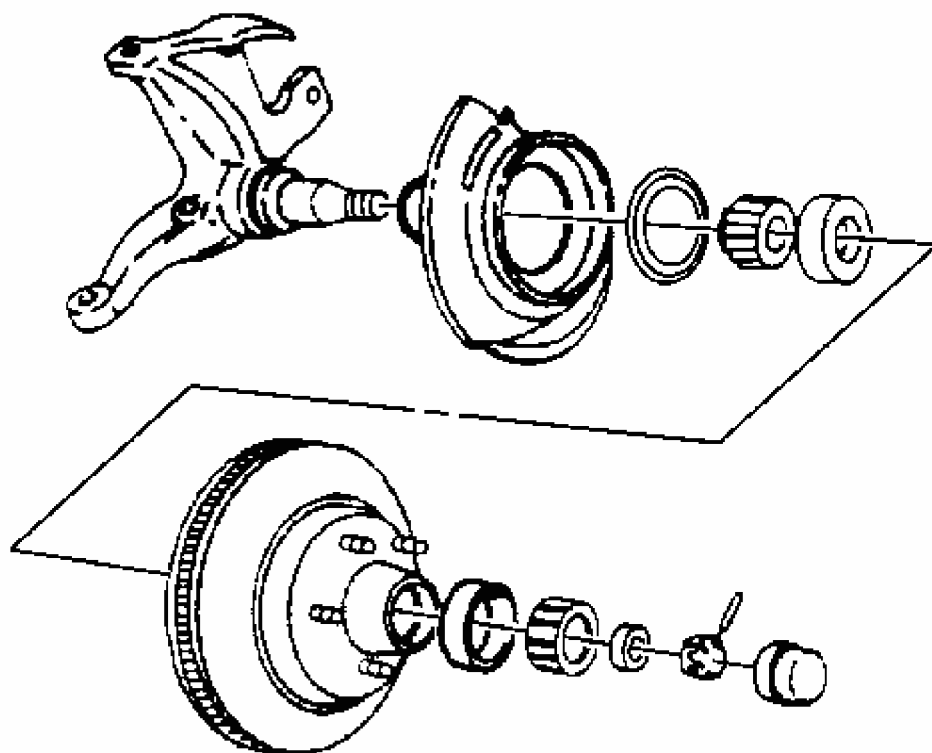


Fig. 93: Exploded View Of Brake Rotor & Wheel Bearings
Courtesy of GENERAL MOTORS CORP.

7. Remove the brake rotor and wheel bearings, 2 wheel drive vehicles only. Refer to **Wheel Hub, Bearing, and Seal Replacement** in Front Suspension.
8. Inspect the brake rotor. Refer to **Brake Rotor Surface and Wear Inspection**.
9. Inspect the brake caliper. Refer to **Brake Caliper Inspection**.
10. Refinish the rotor if necessary. Refer to **Brake Rotor Refinishing**.

Installation Procedure

NOTE: Whenever the brake rotor has been separated from the wheel bearing flange, clean any rust or foreign material from the mating surface of the rotor and flange with the J 42450 hub cleaning kit. Failure to do this may result in increased lateral runout of the rotor and brake pulsation.

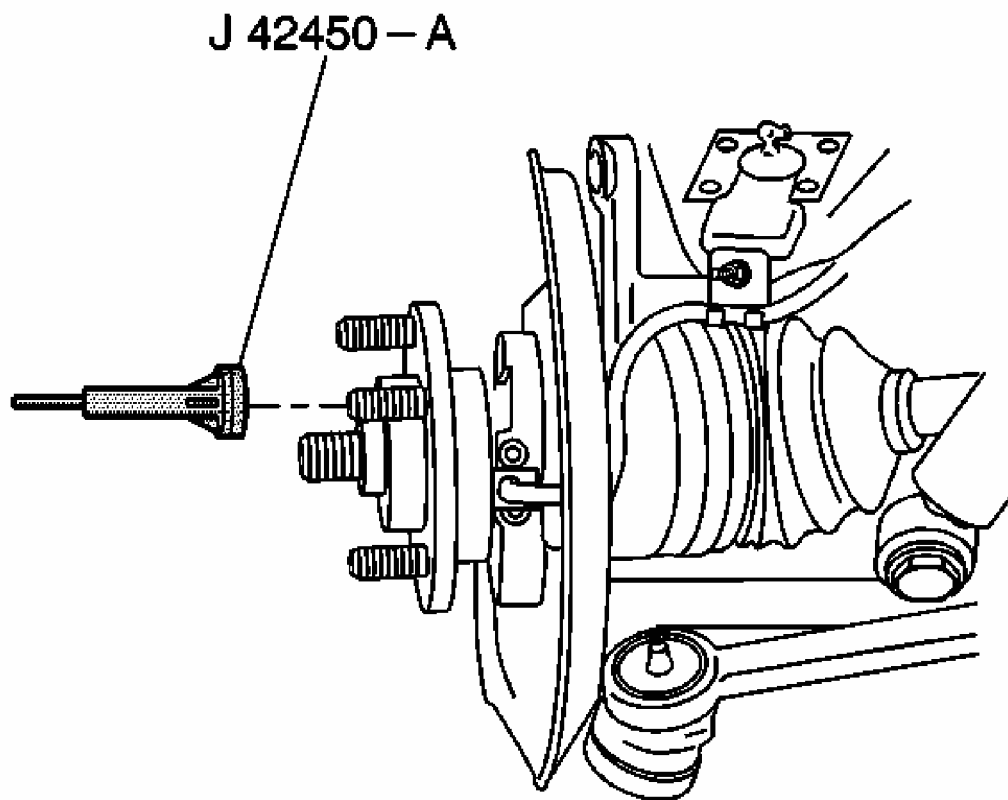


Fig. 94: Cleaning Hub Flange
Courtesy of GENERAL MOTORS CORP.

1. Using the **J 42450-A** , clean the hub flange, 4 wheel drive vehicles.

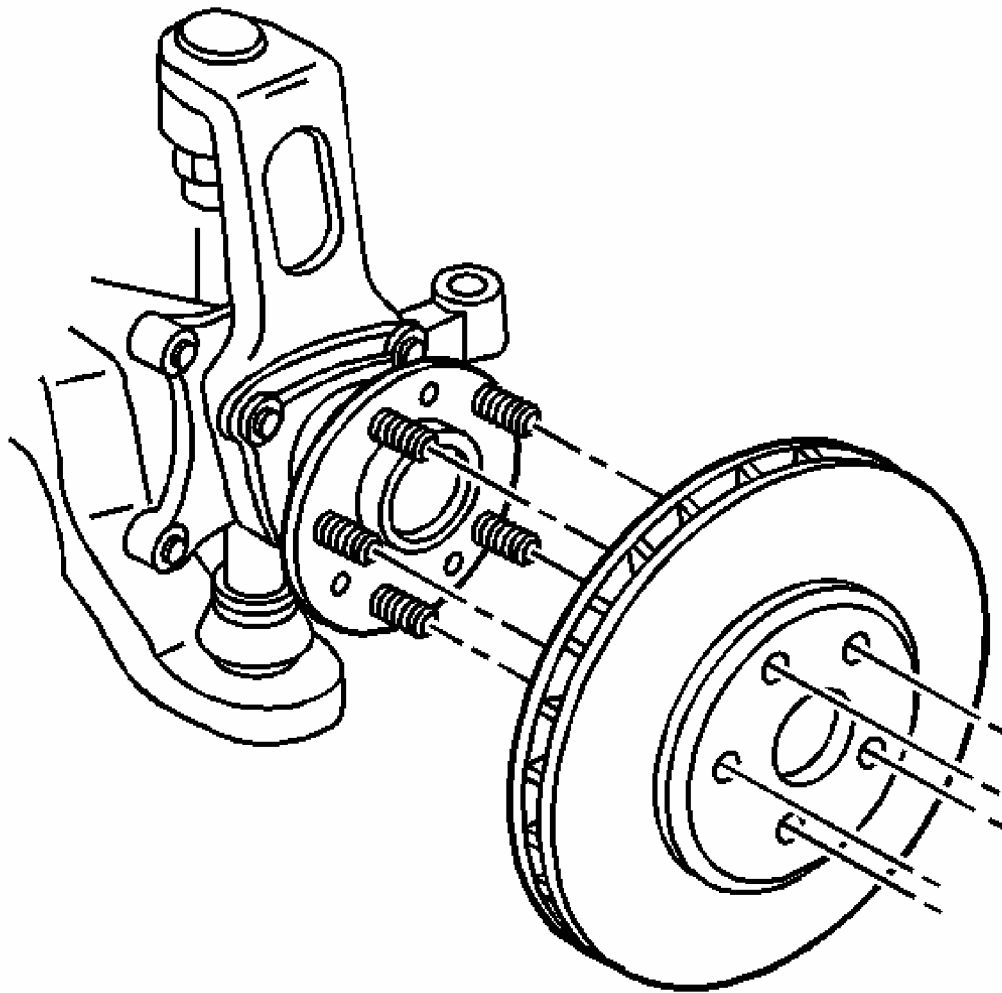


Fig. 95: View Of Brake Rotor
Courtesy of GENERAL MOTORS CORP.

2. Install the brake rotor, 4 wheel drive shown.

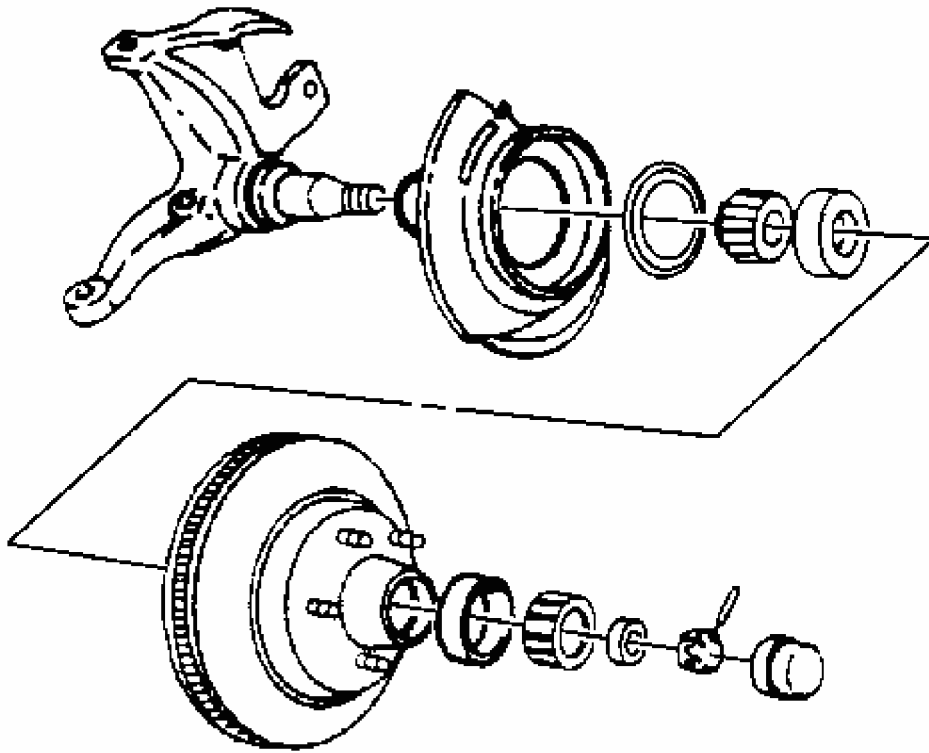


Fig. 96: Exploded View Of Brake Rotor & Wheel Bearings
Courtesy of GENERAL MOTORS CORP.

3. Install the brake rotor and wheel bearings, 2 wheel drive vehicles only. Refer to **Wheel Hub, Bearing, and Seal Replacement** in Front Suspension.

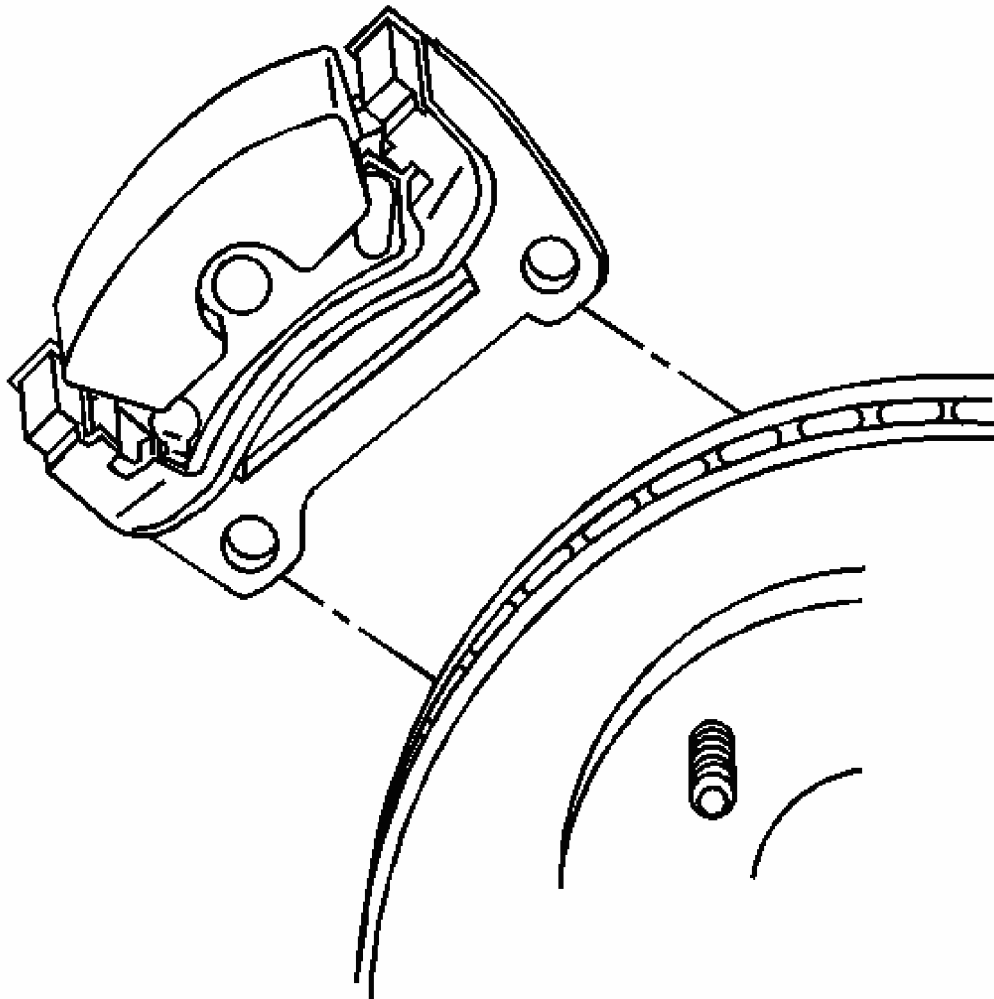


Fig. 97: View Of Caliper Bracket
Courtesy of GENERAL MOTORS CORP.

4. Install the brake caliper and mounting bracket, 4 wheel drive vehicles. Refer to **Brake Caliper Bracket Replacement - Front**.
5. Install the brake caliper, 2 wheel drive vehicles. Refer to **Brake Caliper Replacement - Front (Dual Piston)**.
6. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.
7. Lower the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.

2004 Chevrolet S10 Pickup

2004 BRAKES Disc Brakes - Blazer/S10, Jimmy/Sonoma

Tools Required

J 42450-A Wheel Hub Resurfacing Kit. See Special Tools and Equipment.

Removal Procedure

CAUTION: Refer to Brake Dust Caution in Cautions and Notices.

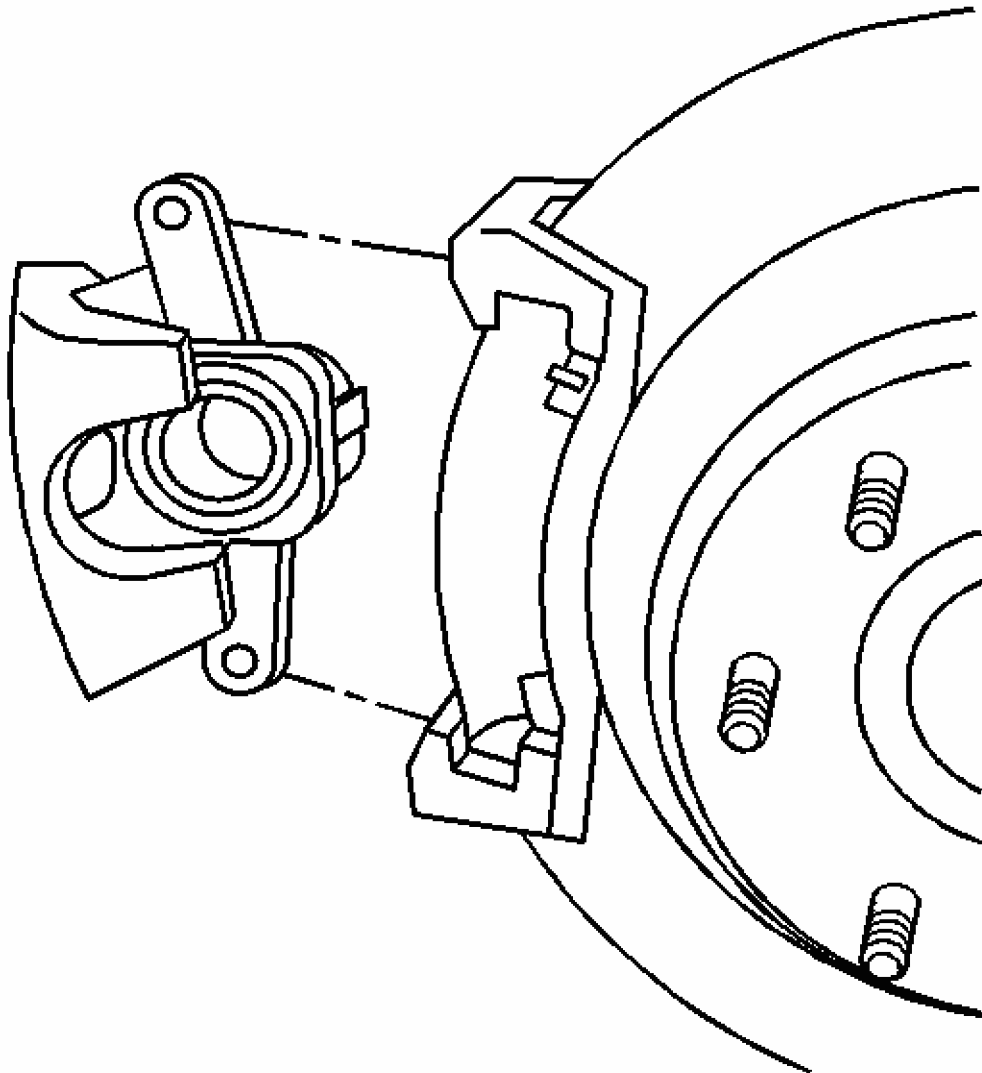


Fig. 98: View Of Caliper To Caliper Mounting Bracket
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Brake Caliper Notice in Cautions and Notices.

IMPORTANT: Do not disconnect the brake hose from the caliper.

1. Remove the brake caliper.

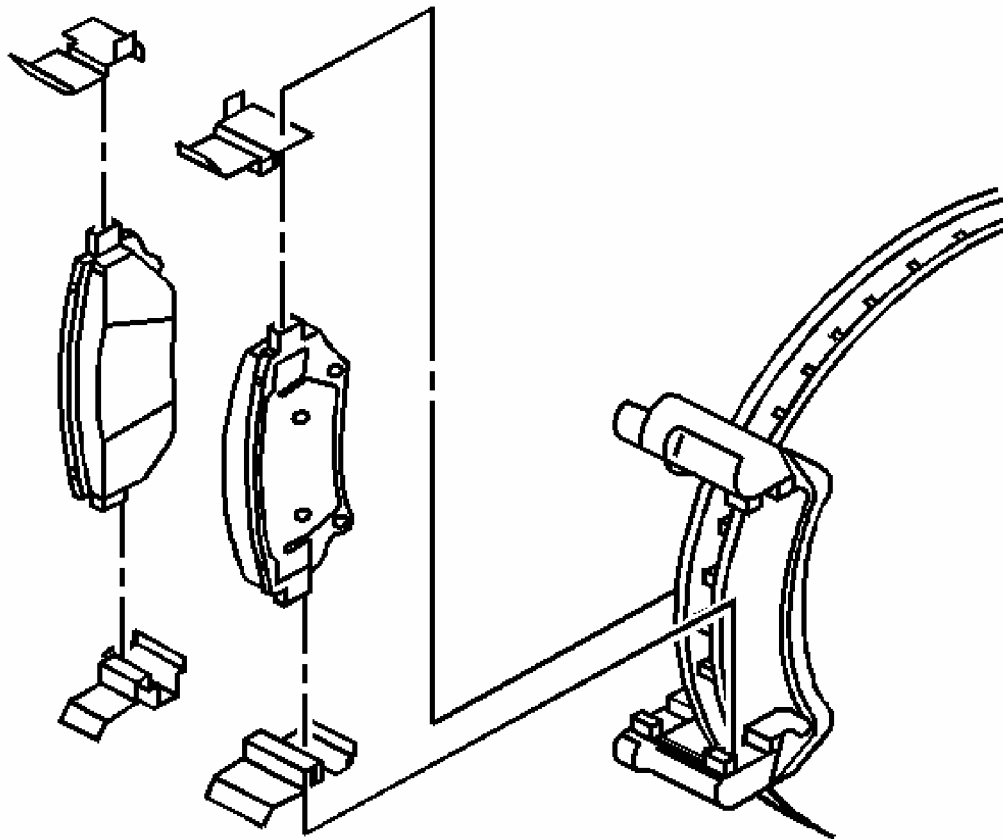


Fig. 99: View Of Brake Pads
Courtesy of GENERAL MOTORS CORP.

2. Remove the brake pads. Refer to **Brake Pads Replacement - Rear**.

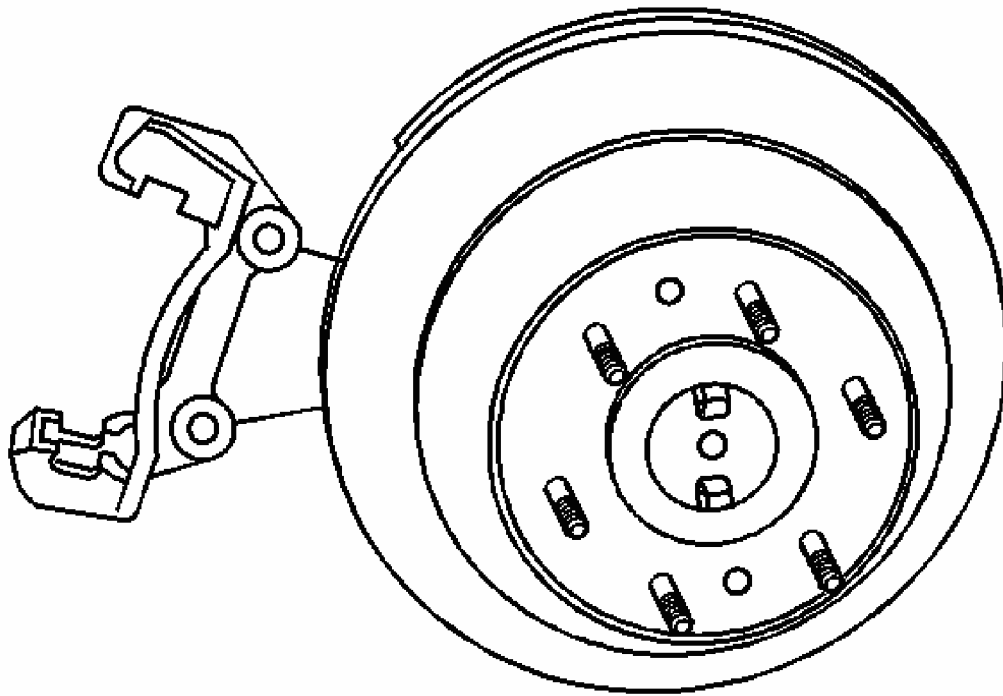


Fig. 100: View Of Caliper Mounting Bracket & Rotor
Courtesy of GENERAL MOTORS CORP.

3. Remove the brake caliper mount. Refer to **Brake Caliper Bracket Replacement - Rear**.

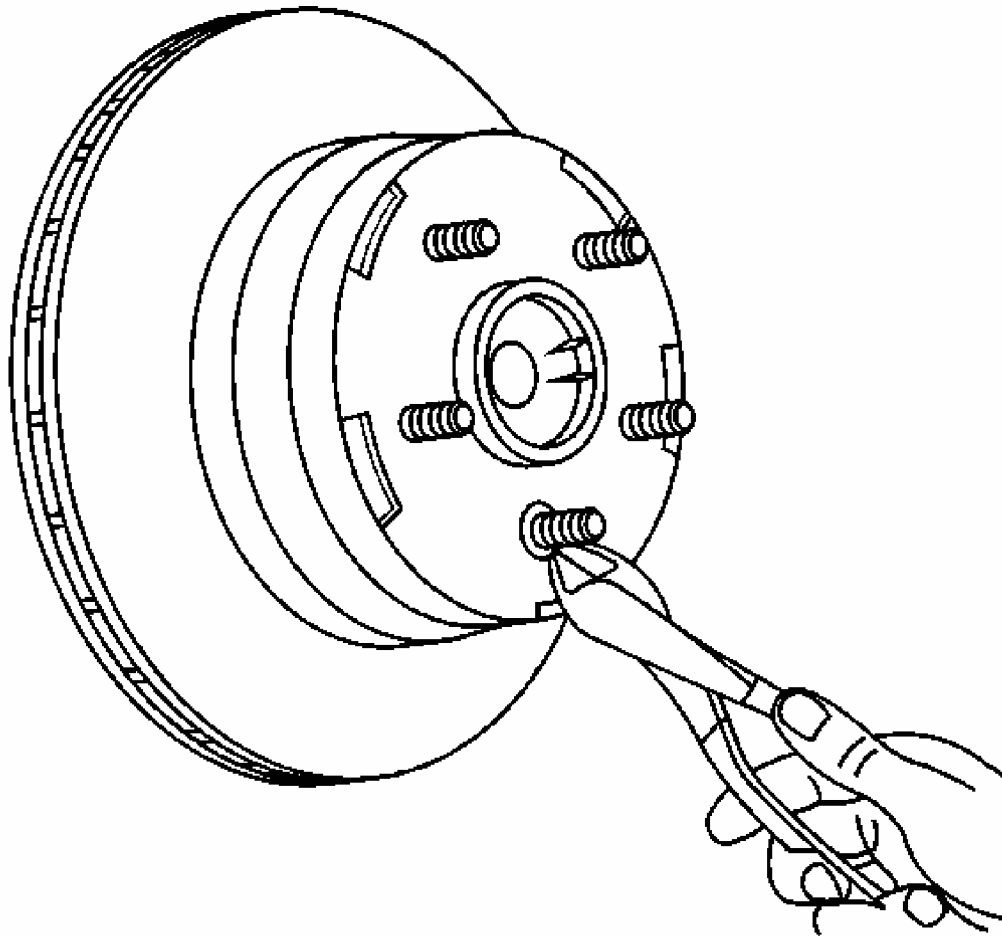


Fig. 101: Removing Retaining Rings
Courtesy of GENERAL MOTORS CORP.

4. Remove and dispose of the sheet metal rotor retainers.

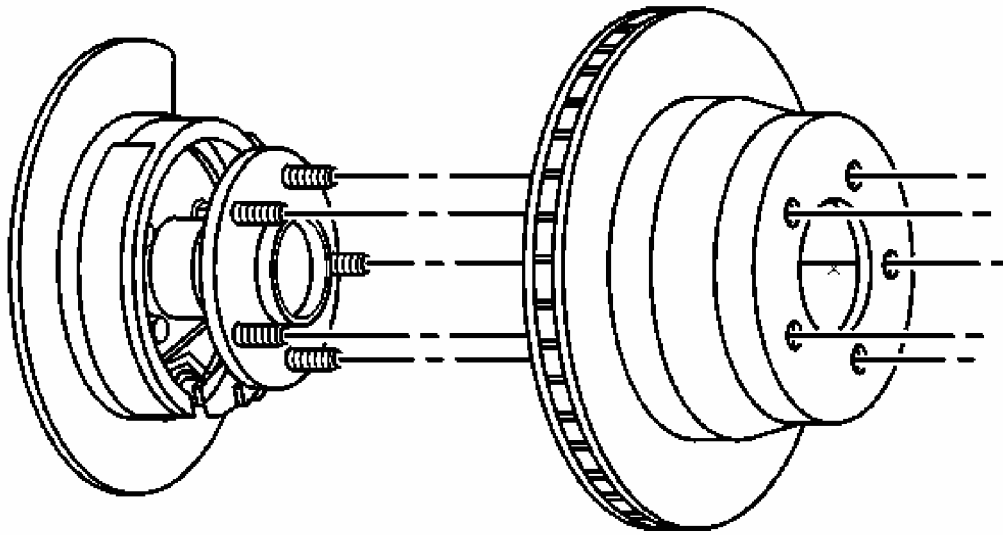


Fig. 102: View Of Brake Rotor
Courtesy of GENERAL MOTORS CORP.

5. Remove the brake rotor.
6. Inspect the brake rotor. Refer to **Brake Rotor Surface and Wear Inspection**.
7. Refinish the brake rotor if necessary. Refer to **Brake Rotor Refinishing**.

Installation Procedure

CAUTION: Do not move the vehicle until a firm brake pedal is obtained. Failure to obtain a firm pedal before moving vehicle may result in personal injury.

NOTE: Whenever the rotor has been separated from the axle flange, clean any rust or foreign material from the mating surface of the axle flange and brake rotor. Failure to do this may result in increased lateral runout of the rotor and brake pulsation.

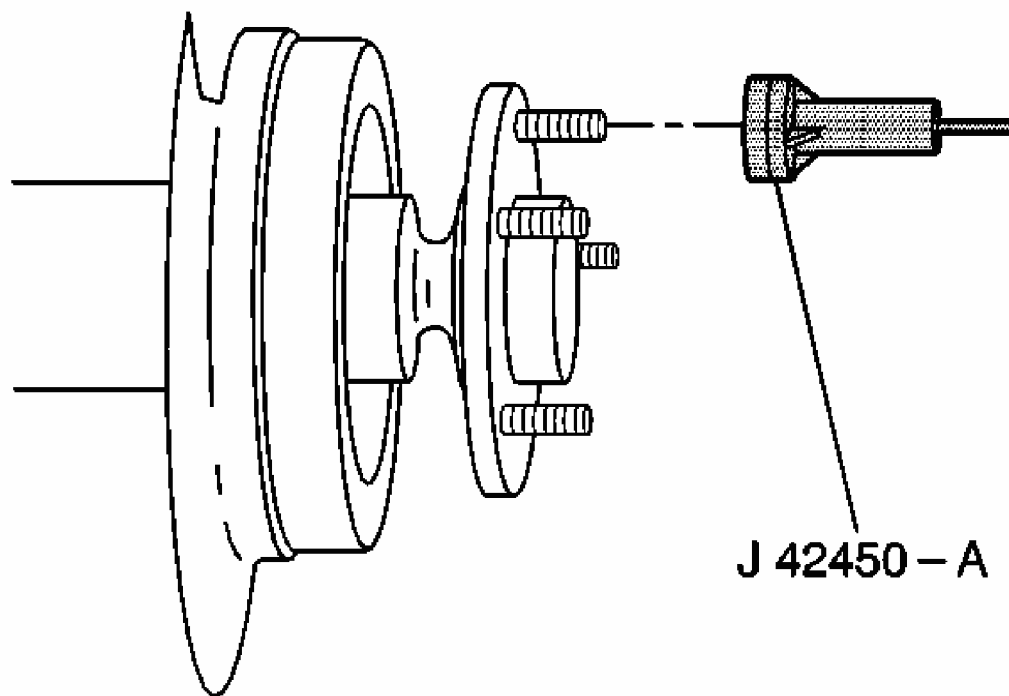


Fig. 103: Cleaning Axle Flange
Courtesy of GENERAL MOTORS CORP.

1. Using the **J 42450-A** , clean the axle flange. See Special Tools and Equipment.

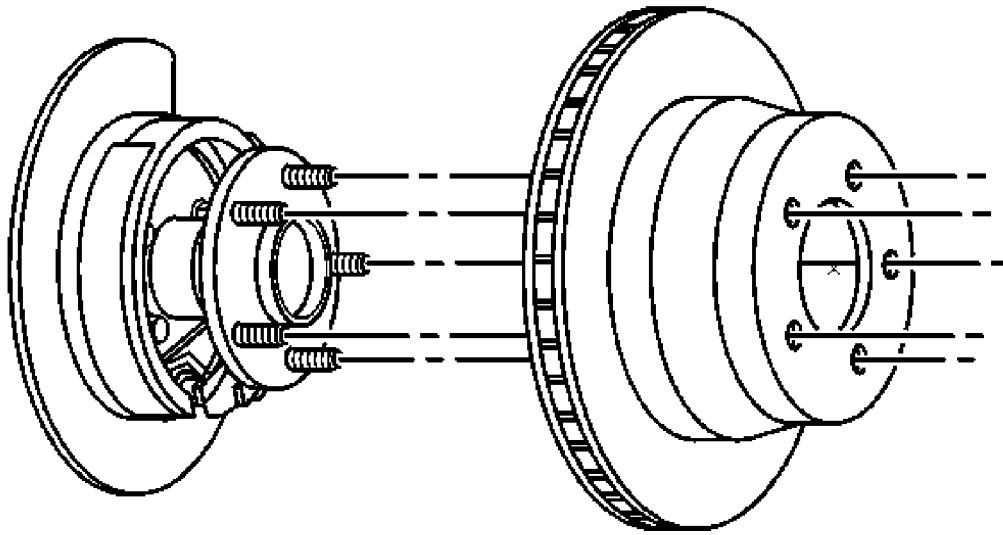


Fig. 104: View Of Brake Rotor
Courtesy of GENERAL MOTORS CORP.

2. Install the brake rotor.

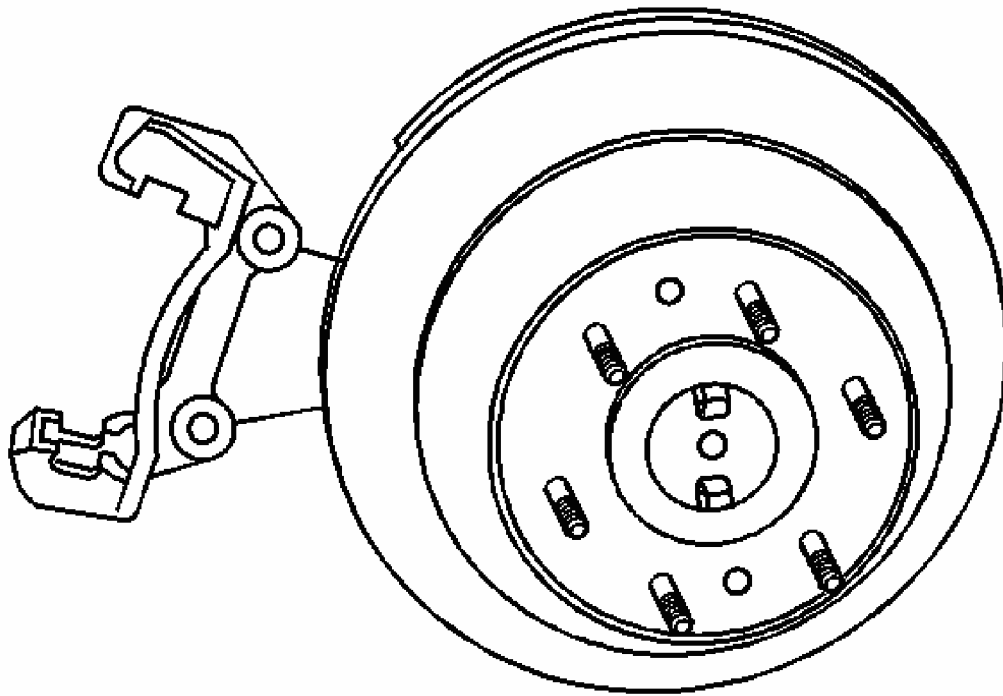


Fig. 105: View Of Caliper Mounting Bracket & Rotor
Courtesy of GENERAL MOTORS CORP.

3. Install the brake caliper mount. Refer to **Brake Caliper Bracket Replacement - Rear**.

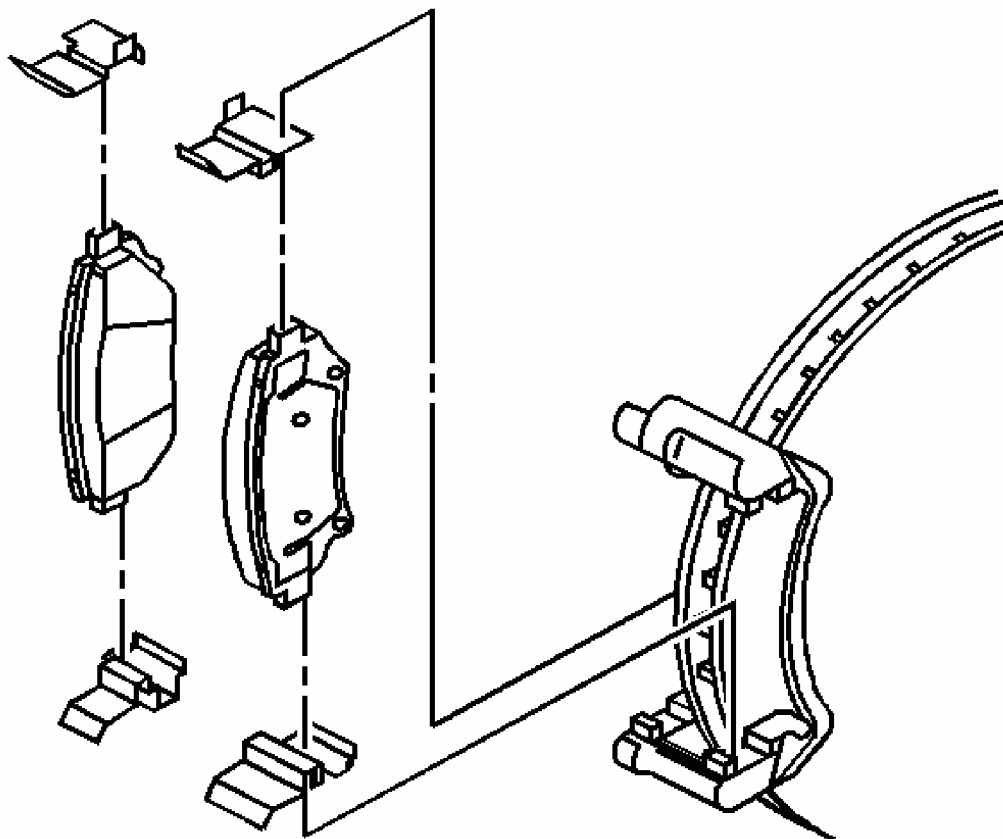


Fig. 106: View Of Brake Pads
Courtesy of GENERAL MOTORS CORP.

4. Install the brake pads. Refer to **Brake Pads Replacement - Rear**.

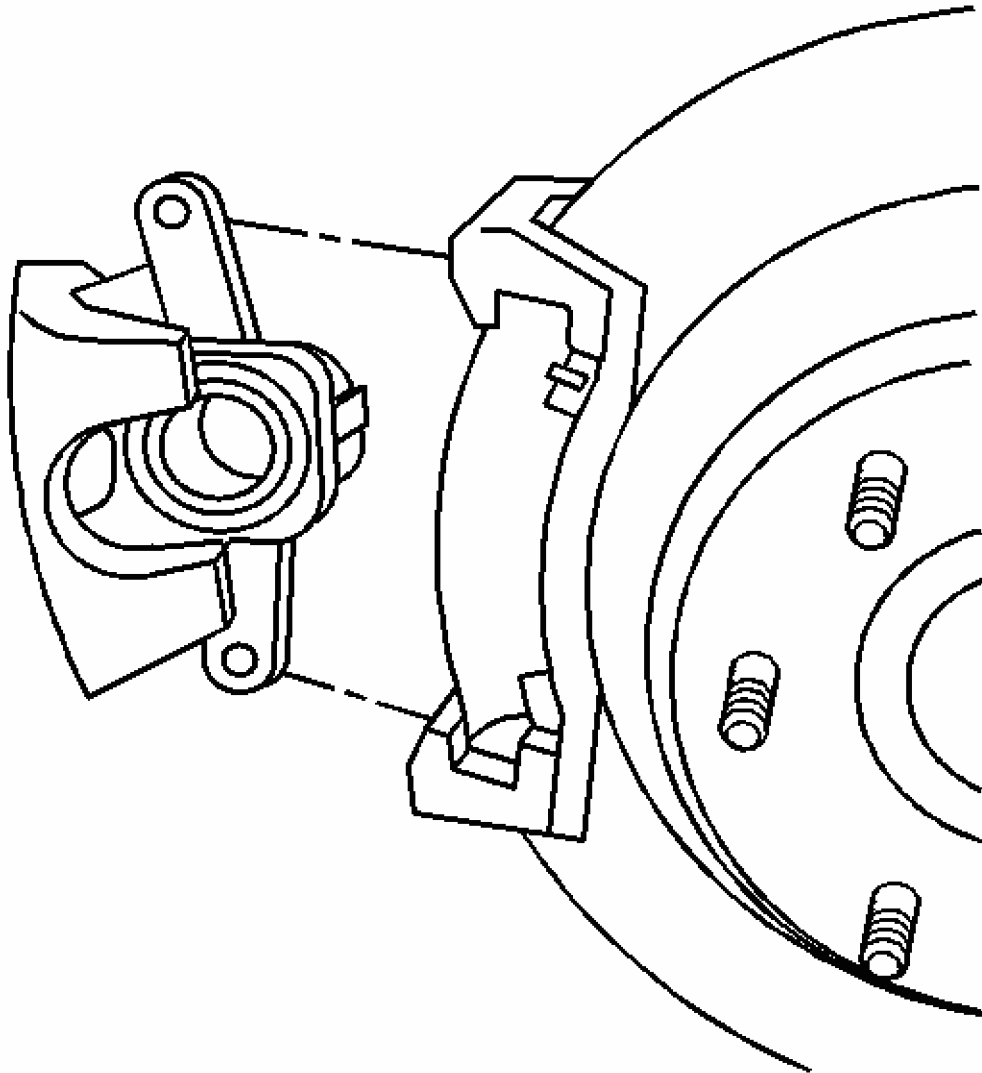


Fig. 107: View Of Caliper To Caliper Mounting Bracket
Courtesy of GENERAL MOTORS CORP.

5. Install the brake caliper. Refer to **Brake Caliper Replacement - Rear**.
6. Burnish replaced or refinished rotors. Refer to **Burnishing Pads and Rotors**.

DISC BRAKE SPLASH SHIELD REPLACEMENT - FRONT

Removal Procedure

CAUTION: Refer to **Brake Dust Caution** in Cautions and

Notices.

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
2. Remove the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.

NOTE: Refer to **Brake Caliper Notice** in Cautions and Notices.

3. Remove the hub and bearing assembly. Refer to **Wheel Hub, Bearing, and Seal Replacement** in Front Suspension.

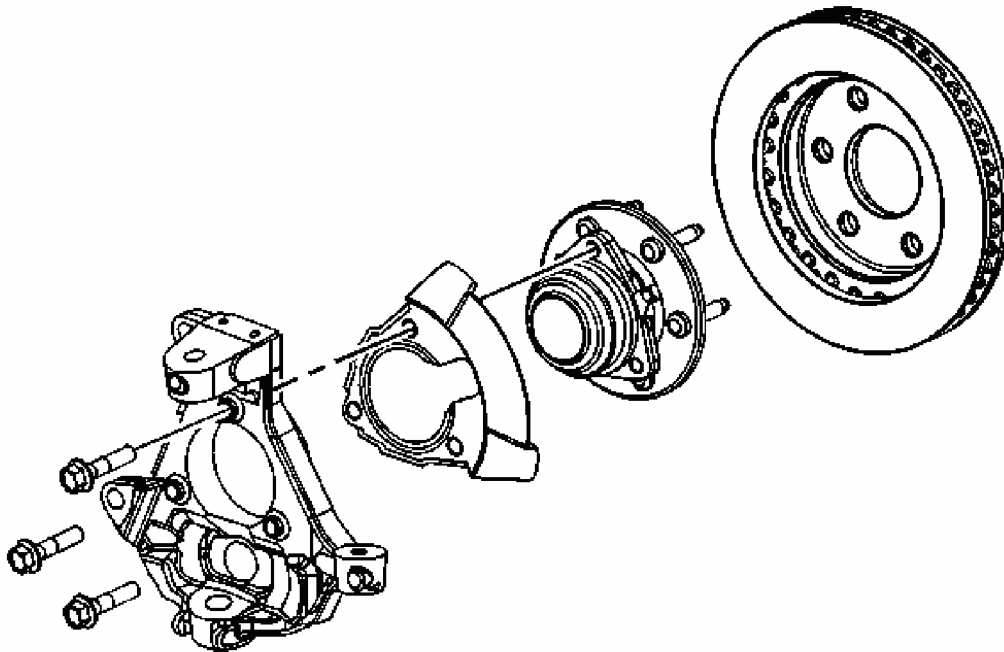


Fig. 108: Locating Splash Shield (15 Series)
Courtesy of GENERAL MOTORS CORP.

4. Remove the splash shield.

Installation Procedure

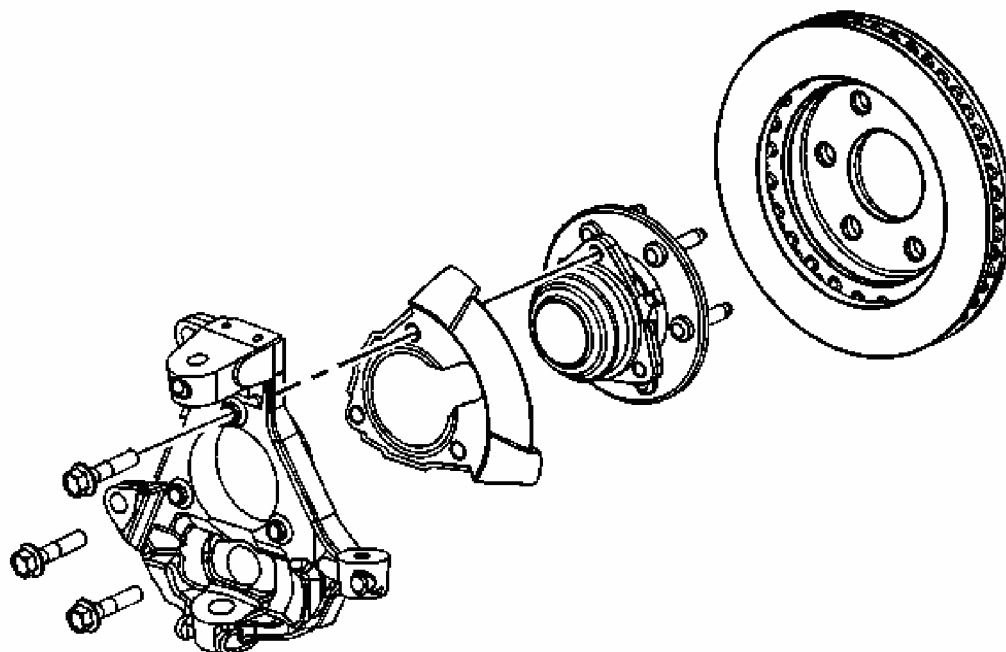


Fig. 109: Locating Splash Shield (15 Series)
Courtesy of GENERAL MOTORS CORP.

1. Install the splash shield.
2. Install the hub and bearing assembly. Refer to **Wheel Hub, Bearing, and Seal Replacement** in Front Suspension.
3. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.
4. Lower the vehicle.
5. With the engine OFF, gradually apply the brake pedal to approximately 2/3 of its travel distance.
6. Slowly release the brake pedal.
7. Wait 15 seconds, then repeat steps 5-6 until a firm brake pedal is obtained. This will properly seat the brake caliper pistons and brake pads.

DISC BRAKE BACKING PLATE REPLACEMENT - REAR

CAUTION: Refer to **Brake Dust Caution** Brake Dust Caution in Cautions and Notices.

1. Raise the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
2. Remove the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.

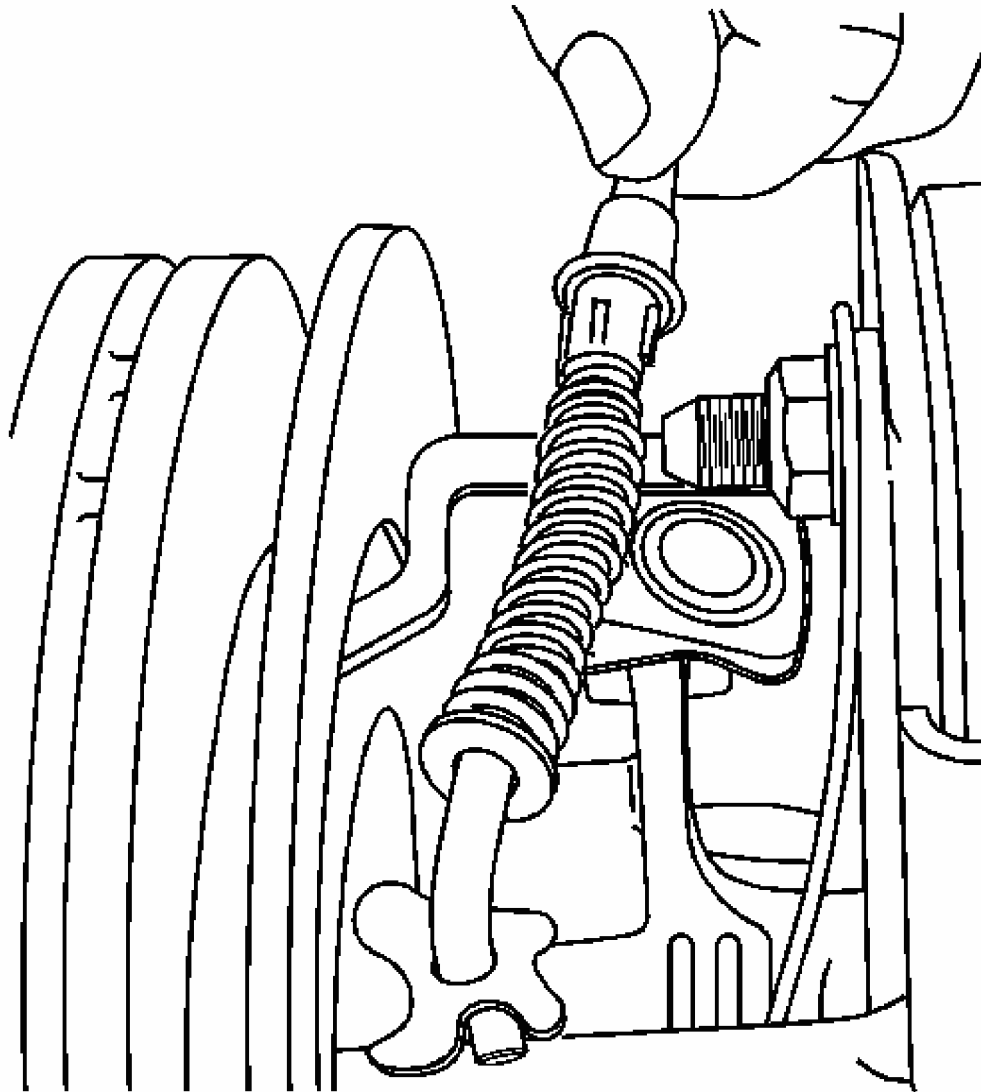


Fig. 110: View Of Parking Brake Cable
Courtesy of GENERAL MOTORS CORP.

3. Remove the park brake cable from the rear brake caliper.

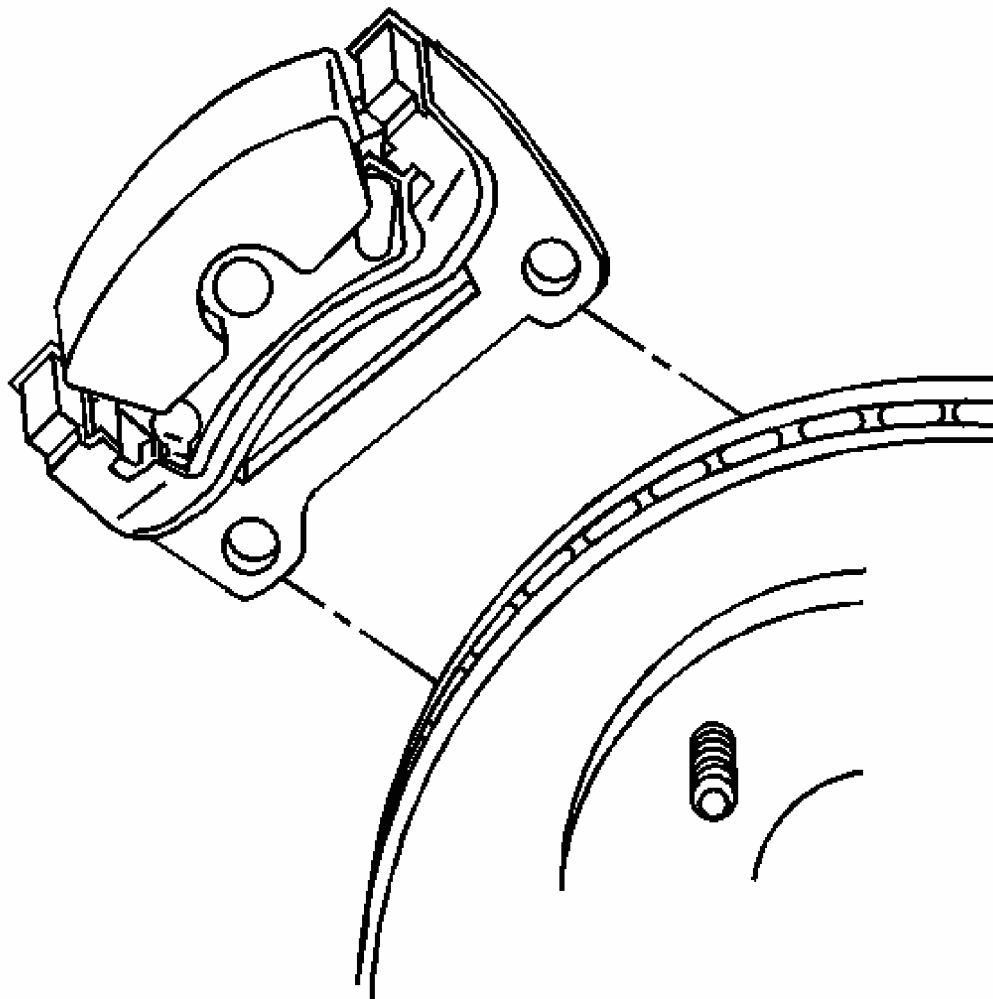


Fig. 111: View Of Caliper Bracket
Courtesy of GENERAL MOTORS CORP.

4. Remove the brake caliper and bracket assembly. Refer to **Brake Caliper Bracket Replacement - Rear.**

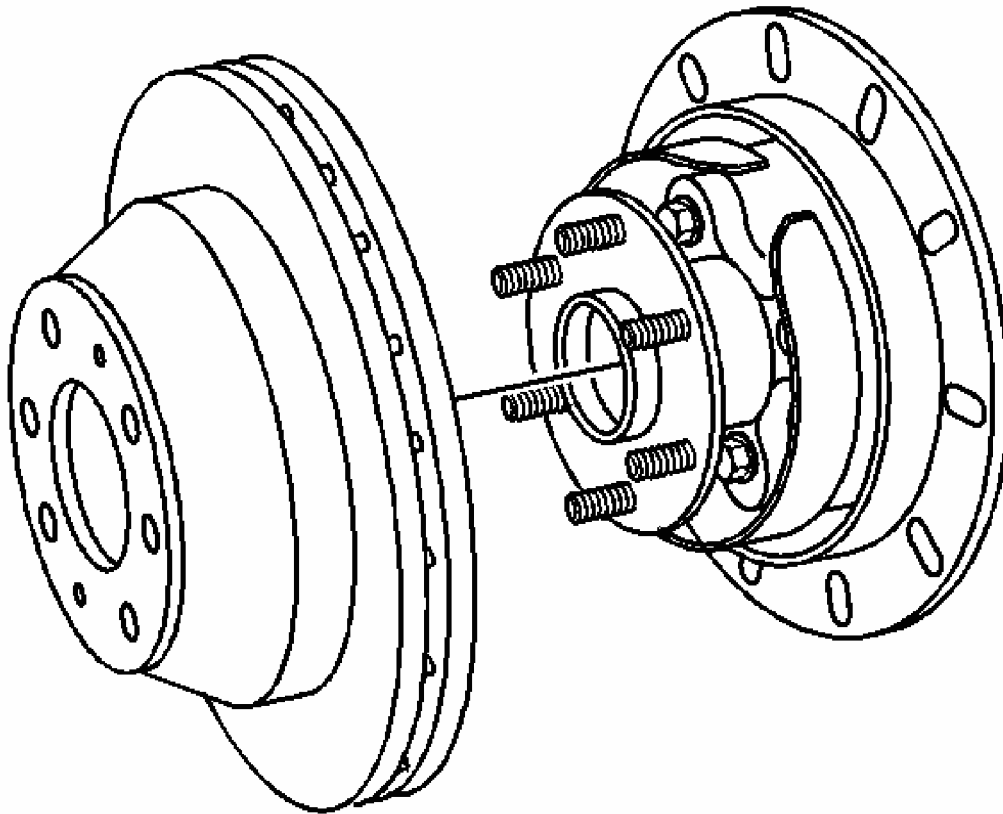


Fig. 112: View Of Rotor To Hub
Courtesy of GENERAL MOTORS CORP.

5. Remove the rear brake rotor.

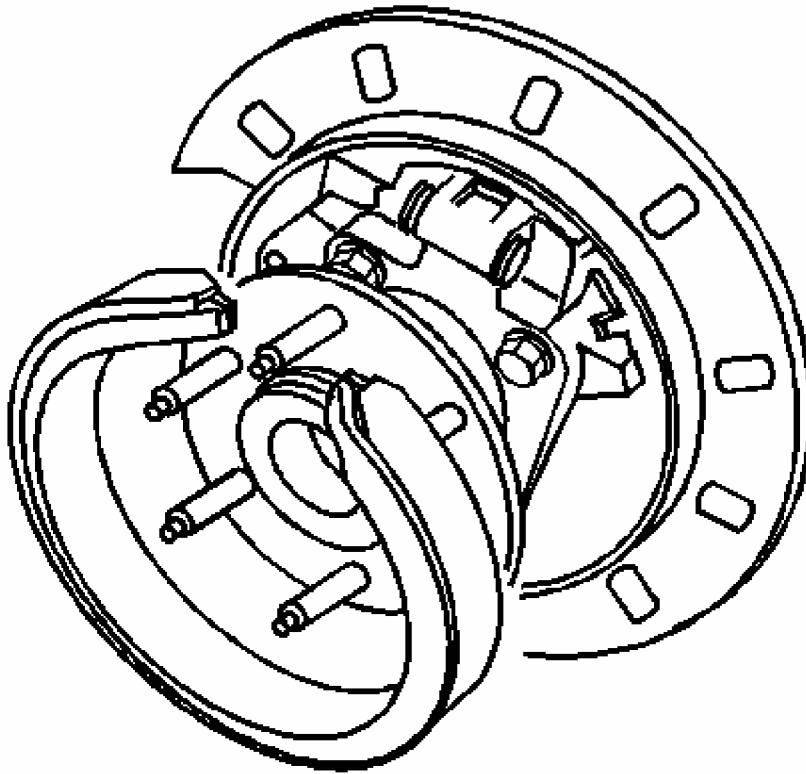


Fig. 113: View Of Park Brake Shoe
Courtesy of GENERAL MOTORS CORP.

6. Remove the park brake shoe.

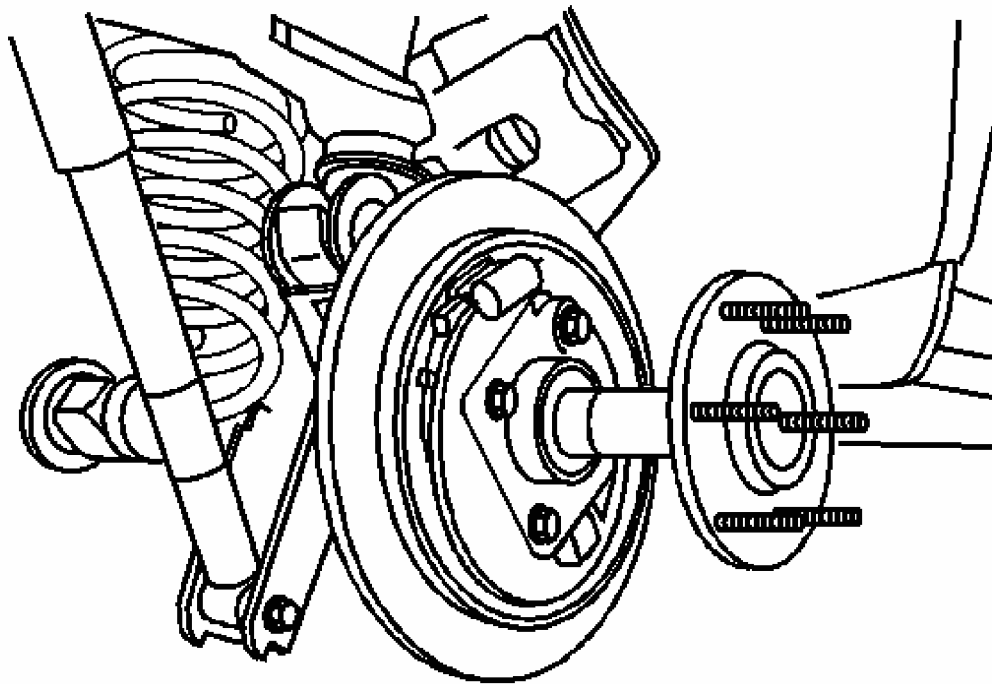


Fig. 114: View Of Rear Drive Axle
Courtesy of GENERAL MOTORS CORP.

7. Remove the rear drive axle. Refer to **Rear Axle Shaft Replacement** in Rear Drive Axle.

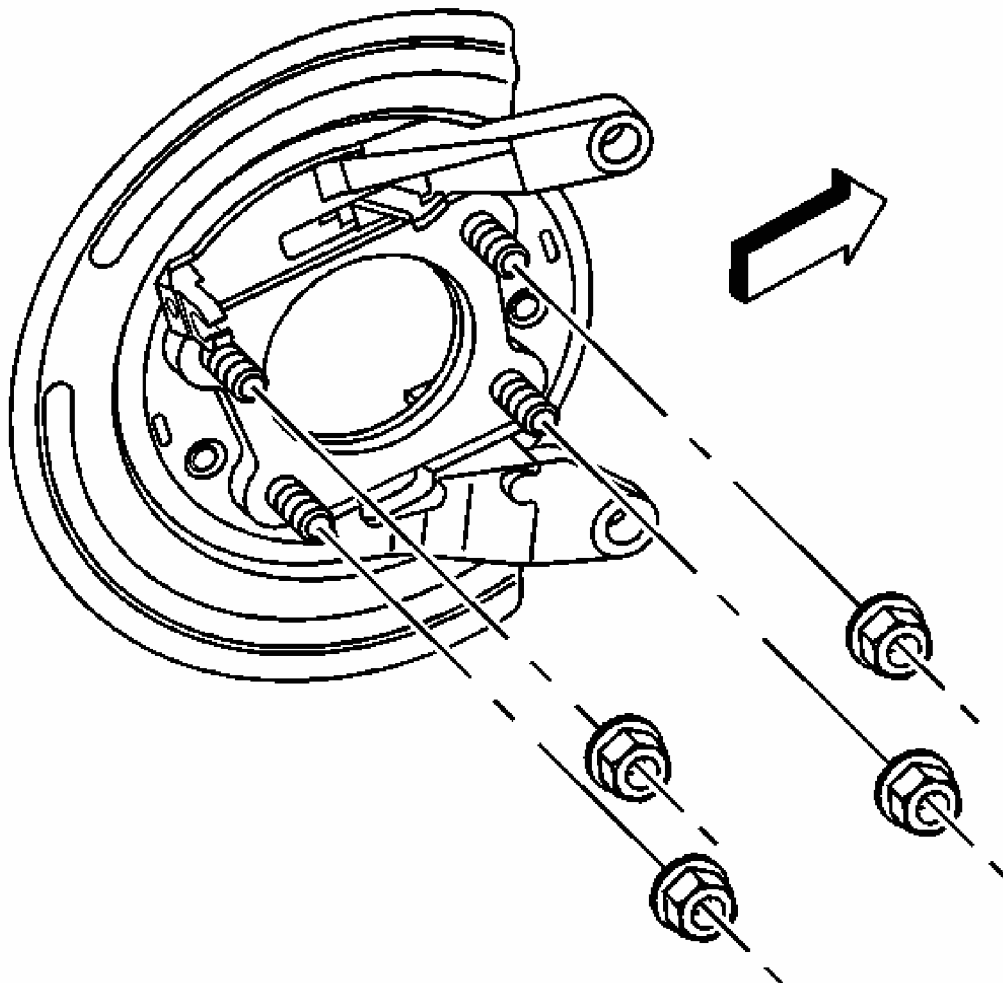


Fig. 115: View Of Backing Plate & Nuts - Rear
Courtesy of GENERAL MOTORS CORP.

8. Remove the retaining nuts from the backing plate.
9. Remove the backing plate from the rear axle housing.

Installation Procedure

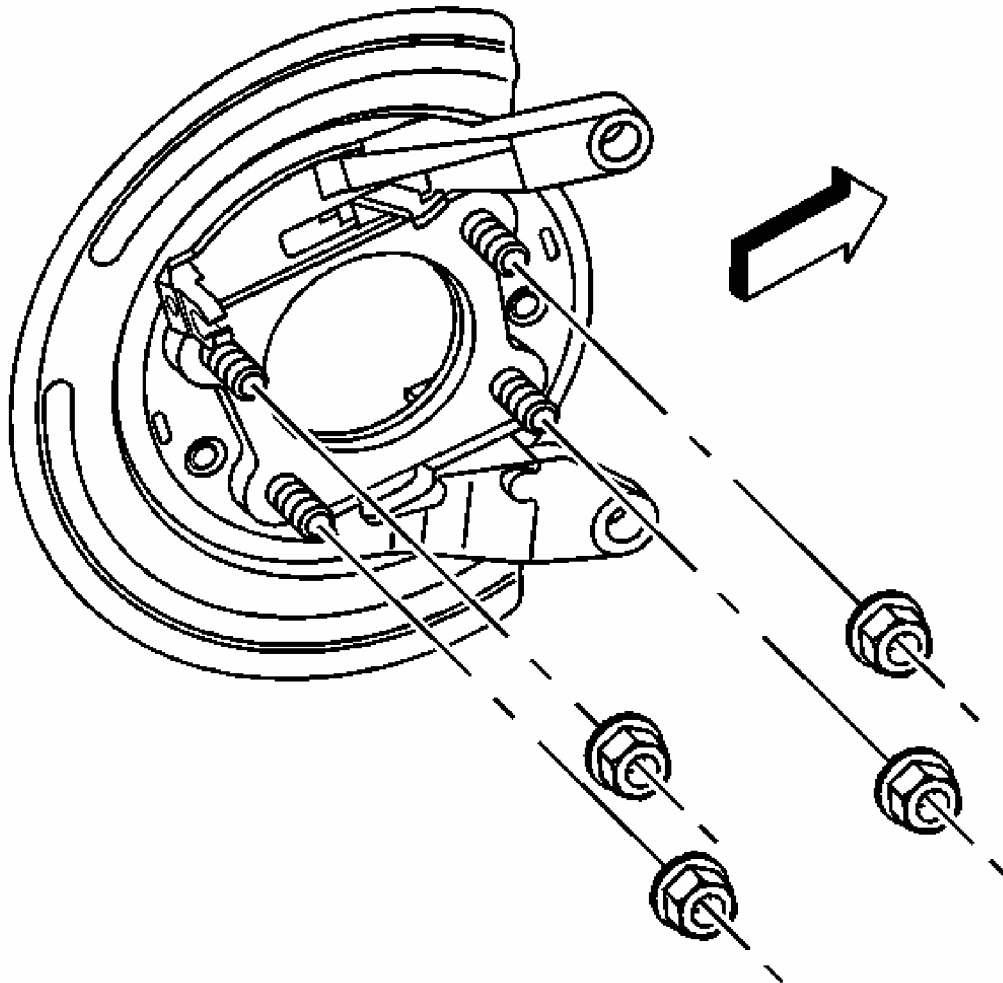


Fig. 116: View Of Backing Plate & Nuts - Rear
Courtesy of GENERAL MOTORS CORP.

1. Install the backing plate to the axle housing flange.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the backing plate nuts.

Tighten: Tighten the backing plate bolts to 68 N.m (48 lb ft).

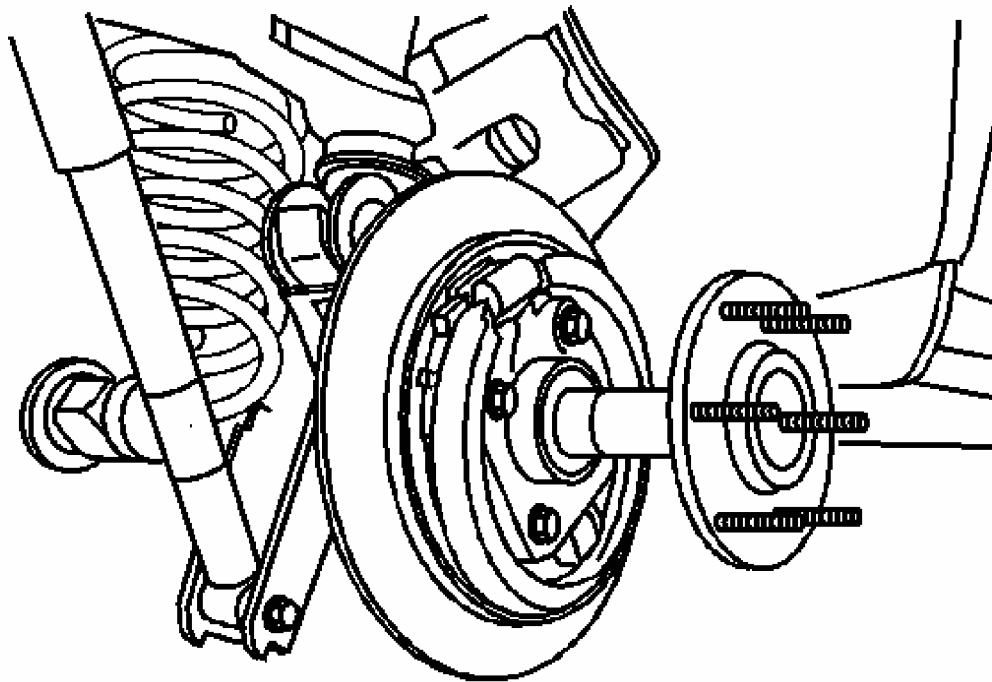


Fig. 117: View Of Rear Axle Assembly
Courtesy of GENERAL MOTORS CORP.

3. Install the rear drive axle. Refer to **Rear Axle Shaft Replacement** in Rear Drive Axle.

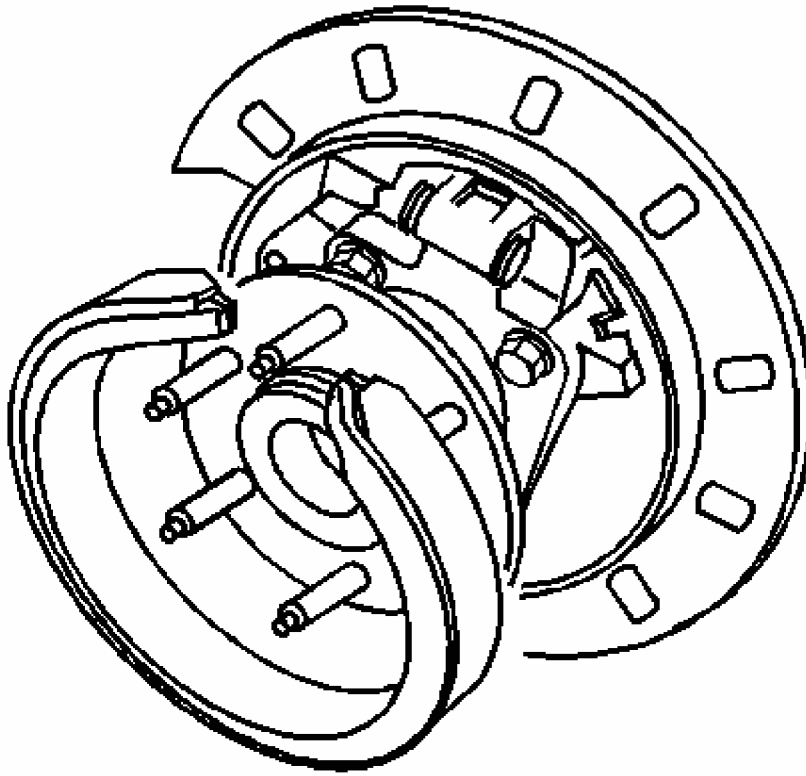


Fig. 118: View Of Park Brake Shoe
Courtesy of GENERAL MOTORS CORP.

4. Install the park brake shoe.

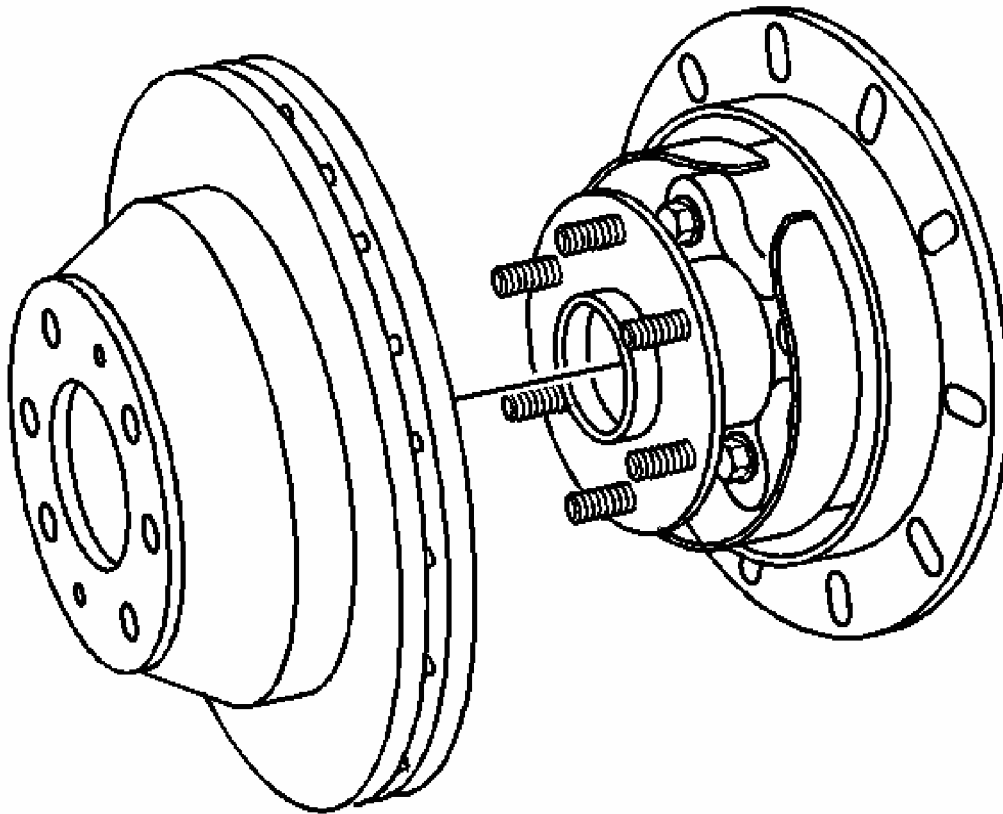


Fig. 119: View Of Rotor To Hub
Courtesy of GENERAL MOTORS CORP.

5. Install the rear brake rotor.

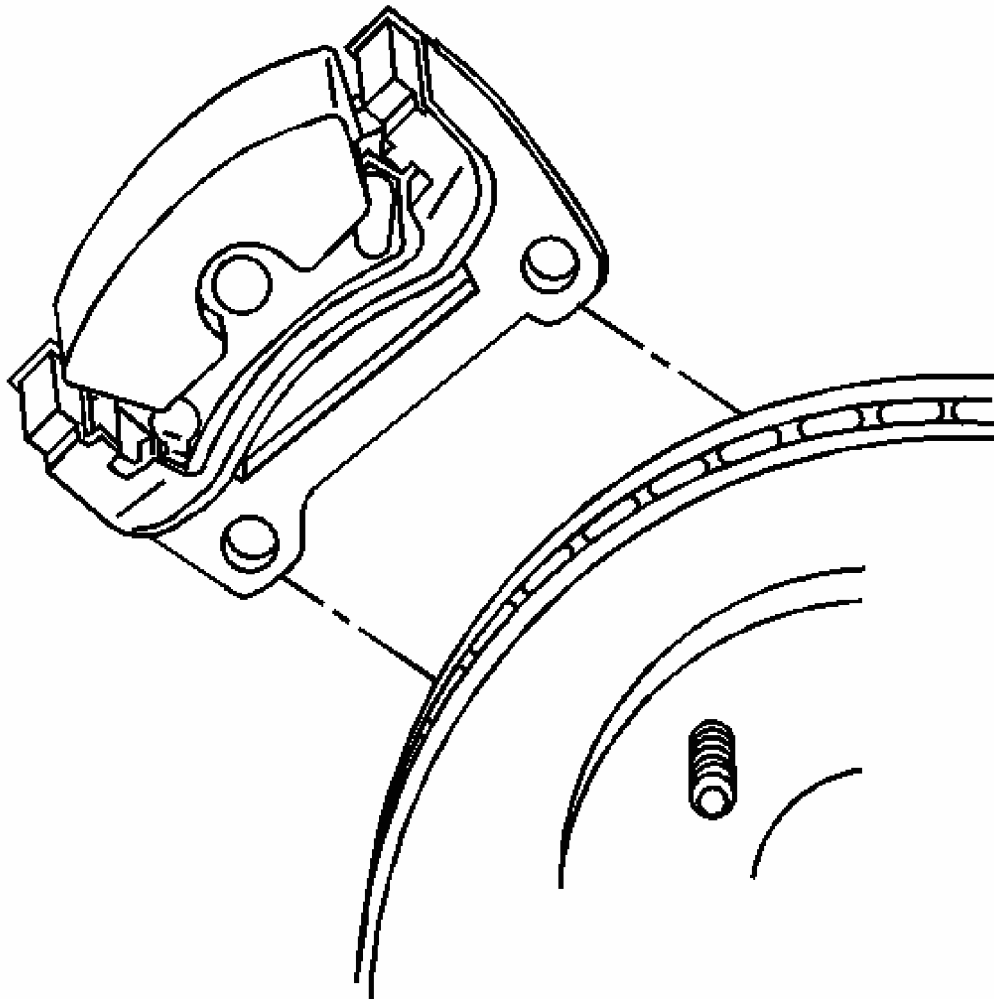


Fig. 120: View Of Caliper Bracket
Courtesy of GENERAL MOTORS CORP.

6. Install the brake caliper and bracket assembly. Refer to **Brake Caliper Bracket Replacement - Rear.**

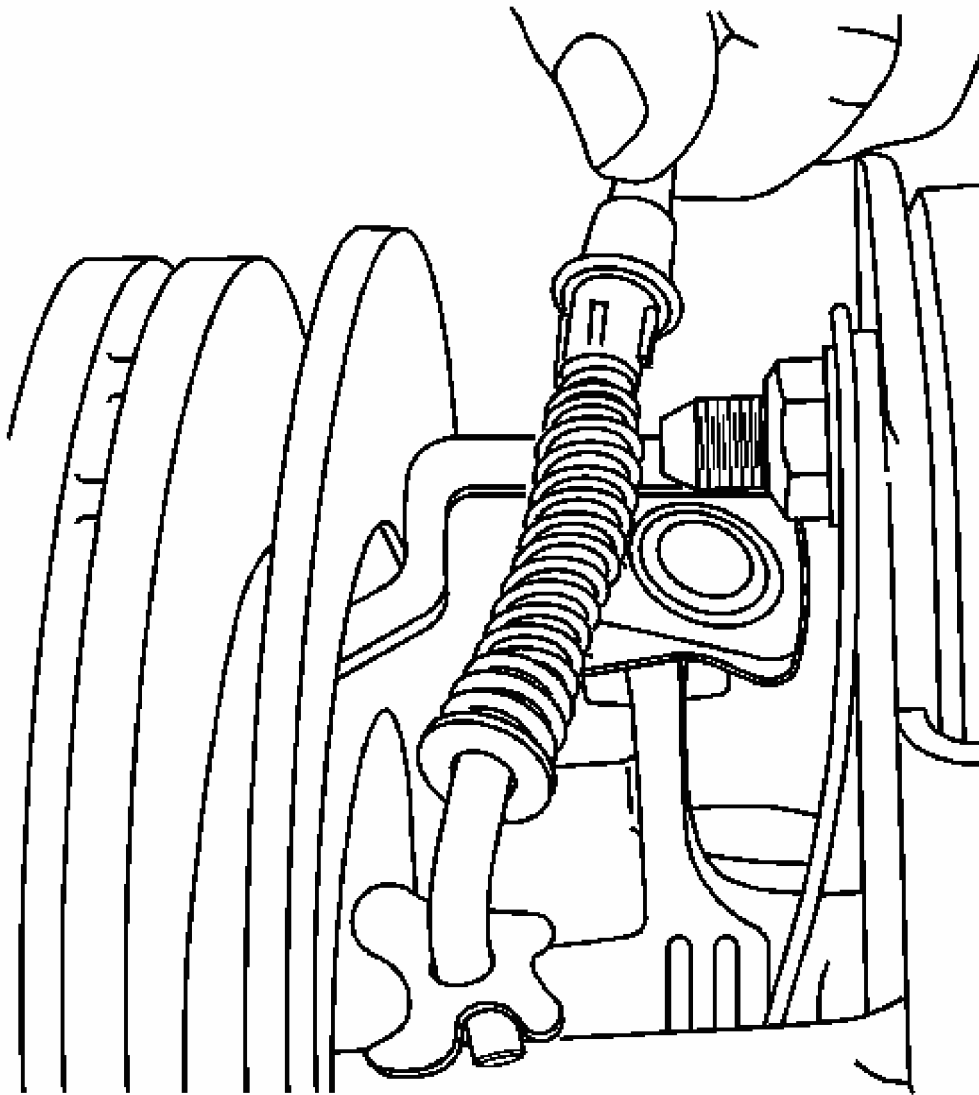


Fig. 121: View Of Parking Brake Cable
Courtesy of GENERAL MOTORS CORP.

7. Install the park brake cable to the rear brake caliper.
8. Adjust the park brake shoe. Refer to **Park Brake Adjustment** in Park Brake.
9. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.
10. Lower the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.

Tools Required

- **J 41013** Rotor Resurfacing Kit. See Special Tools and Equipment.
- **J 42450-A** Wheel Hub Resurfacing Kit. See Special Tools and Equipment.

IMPORTANT: Do NOT refinish the brake rotors in order to correct any of the following complaints:

- **Growl or squeal brake noise**
- **Premature brake lining wear**
- **Cosmetic or superficial corrosion of the rotor braking surface**
- **Rotor discoloration**

Refinish the brake rotors ONLY when one or more of the following conditions exist:

- **Groove depth in excess of specification**
- **Severe scoring of the rotor braking surface**
- **Brake pulsation caused by the following:**
 - **Lateral runout in excess of specification**
 - **Brake rotor thickness variation in excess of specification**
 - **Corrosion or pitting that is deeper than the rotor braking surface**

1. Use the **J 42450-A** in order to clean the wheel bearing/hub.
2. Use a micrometer in order to measure the thinnest point of the brake rotor. If the thinnest point of the brake rotor exceeds the brake rotor minimum thickness, do NOT refinish the brake rotor. Replace the brake rotor.
3. Use the **J 41013** in order to THOROUGHLY clean the rust from the brake rotor flange.
4. Refinish the brake rotor. Refer to the brake lathe manufacturer's operating instructions.

IMPORTANT: Failure to obtain the best possible braking surface finish may cause the vehicle to stop with difficulty.

5. After machining the rotor, use 120 grit aluminum oxide sandpaper and a non-directional rotor finisher, if available, in order to create a non-directional braking surface.
6. Clean the braking surfaces with GM P/N 12377981, Canadian P/N 10953463, or

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2004 BRAKES Disc Brakes - Blazer/S10, Jimmy/Sonoma

equivalent brake parts cleaner.

DESCRIPTION AND OPERATION

DISC BRAKE SYSTEM DESCRIPTION AND OPERATION

System Component Description

The disc brake system consists of the following:

Disc Brake Pads

Applies mechanical output force from hydraulic brake calipers to the friction surfaces of brake rotors.

Disc Brake Rotors

Uses mechanical output force applied to friction surfaces from disc brake pads to slow speed of tire and wheel assembly rotation.

Disc Brake Pad Hardware

Secures disc brake pads firmly in proper relationship to hydraulic brake calipers; enables sliding motion of brake pads when mechanical output force is applied.

Disc Brake Caliper Hardware

Provides mounting for hydraulic brake caliper, secures caliper firmly in proper relationship to caliper bracket; enables sliding motion of brake caliper to brake pads when mechanical output force is applied.

System Operation

Mechanical output force is applied from the hydraulic brake caliper pistons to the inner brake pads. As the pistons press the inner brake pads outward, the caliper housings draw the outer brake pads inward, allowing the output force to be equally distributed. The brake pads then apply the output force to the friction surfaces on both sides of the brake rotors, which slows the rotation of the tire and wheel assemblies. The proper function of both the brake pad and brake caliper hardware is essential to the even distribution of braking force.

SPECIAL TOOLS AND EQUIPMENT

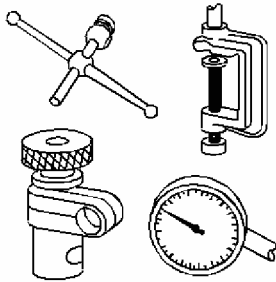
SPECIAL TOOLS

Special Tools

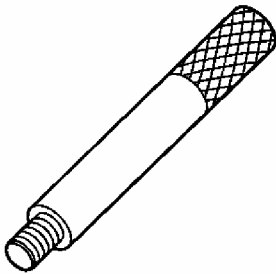
Illustration	Tool Number / Description

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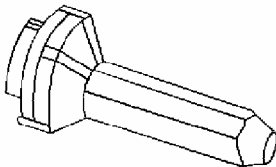
2004 BRAKES Disc Brakes - Blazer/S10, Jimmy/Sonoma



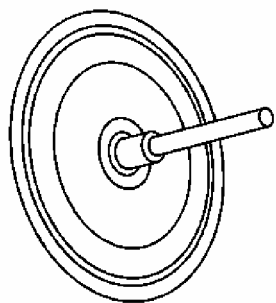
J 8001
Dial Indicator Set



J 8092
Driver Handle



J 26267
Piston Seal Installer

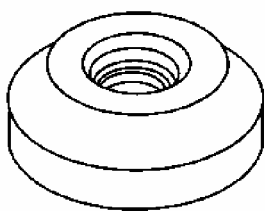
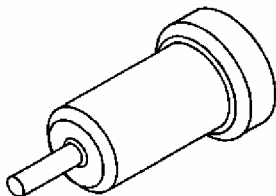


J 41013
Rotor Resurfacing Kit

J 42450-A
Wheel Hub Resurfacing Kit

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J 45863 . See **Special Tools and Equipment.**
Boot Seal Installer